

Mr. Samuel Borries
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Mr. Paul Bucholtz

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Lansing, MI 48933-1502

Ms. Sharon Hanshue MDNR 530 West Allegan Street Lansing, MI 48933-1521

Subject:

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site Time-Critical Removal Action – Former Plainwell Impoundment 2009 Q1, Q2, and Q3 Groundwater Sampling Results

Dear Mr. Borries, Mr. Bucholtz, and Ms. Hanshue:

In accordance with the approved Former Plainwell Impoundment Time-Critical Removal Action Design Report (TCRA Design Report; ARCADIS BBL 2007a) and the Supplemental Remedial Investigation/Feasibility Study Work Plan – Morrow Dam to Plainwell Dam (Area 1 SRI/FS Work Plan; ARCADIS BBL 2007b), the Kalamazoo River Study Group (KRSG) installed, monitoring, and sampled fifteen groundwater monitoring wells in the former Plainwell Impoundment in Allegan County, Michigan.

The goals of the groundwater investigation are to:

- Evaluate the potential presence of polychlorinated biphenyls (PCBs) in the groundwater within areas of the former Plainwell Impoundment in which PCBcontaining sediments were, by design, left in place after completion of the TCRA.
- 2. Assess the migration of PCBs (if any) in groundwater to the Kalamazoo River.
- 3. Develop groundwater data that are of adequate quality to support an ecological risk assessment, if appropriate.

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December 9, 2009

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As described in the TCRA Design Report and Area 1 SRI/FS Work Plan, the groundwater monitoring program was designed to include eight quarterly sampling events over a two-year period. Three of the quarterly sampling events are now complete (April, June, and September 2009). PCBs have not been detected in any of the 45 groundwater samples collected by ARCADIS, or any of the 15 split samples collected by the Michigan Department of Environmental Quality (MDEQ).

We believe these results indicate that PCBs are not present in groundwater, and that it is reasonable to conclude groundwater in the former Plainwell Impoundment is not of concern with respect to either potential migration to the Kalamazoo River or potential risks to ecological receptors. If the results of the fourth quarter groundwater samples, which will be collected in December 2009, are consistent with the prior three quarters of data such that these conclusions are further supported, we will submit a request for U.S. Environmental Protection Agency (USEPA) approval to discontinue groundwater sampling at all wells in the former Plainwell Impoundment and permanently abandon the monitoring wells according to applicable MDEQ standards.

Information to support USEPA's consideration of a request to discontinue sampling – including details of the installation, approach, and results available from the first three quarters of sampling – are described below and in the supporting tables, figure, and attachments.

Installation of Well Network and Staff Gauges

The locations of the wells and the construction methods used in the field were approved by USEPA and MDEQ and are summarized in a March 4, 2009 letter (Cowin 2009). Pilot soil borings were drilled between November 10 – November 17, 2008, and a network of 15 monitoring wells (MW-1 through MW-15) was installed between March 2 and March 27, 2009. The soil borings and well installations were performed by Mateco Drilling Company under the observation of ARCADIS. Following installation, Mateco developed the wells to remove fine-grained particles that remained in the wells and re-establish the natural hydraulic flow conditions. The locations of the wells are shown on Figure 1. Well construction notes and logs are included in Attachments 1 and 2, respectively.

In addition to the well network, five staff gauges (SG-1 to SG-5) were installed to monitor surface water elevations within the Kalamazoo River. Staff gauges were mounted on fixed structures. Surface water elevation measurements were obtained to track seasonal variability. The locations of the staff gauges are shown on Figure 1.

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The horizontal and vertical coordinates of the monitoring wells and staff gauges, as well as the elevation of the top of each staff gauge and its zero point, were surveyed by a Michigan-registered surveyor and incorporated into the GIS database for the project. The coordinates for each well and gauge are listed in Table 1.

Groundwater Monitoring Approach

Groundwater monitoring was scheduled to be conducted for eight quarterly sampling events over a two-year period. To date, ARCADIS has performed three quarterly sampling events, and the fourth will be conducted in December 2009. Prior to each sampling event, groundwater and surface water elevations are monitored for a period of two weeks to verify that water is flowing to the river. Data from the first three sampling events are tabulated in Table 2.

Groundwater and surface water samples were collected during the weeks of April 13, June 29, and September 21, 2009 (the fourth round of sampling is scheduled for the week of December 14, 2009). Sampling logs are included in Attachment 3. Groundwater samples were collected using ultra-low flow sampling techniques. Surface water samples were collected from the river within the former Plainwell Impoundment on the first day and last day of quarterly groundwater sampling activities. Surface water samples were collected near SG-5 (see Figure 1) during each groundwater monitoring event.

A total of 45 groundwater samples (excluding duplicate samples) were collected by ARCADIS. All samples were submitted to Test America Labs in Burlington, Vermont for the following analyses (sample analytical methods to be consistent with the *Multi-Area Quality Assurance Project Plan for the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Revision 1* [Multi-Area QAPP, ARCADIS 2009]):

- Total PCBs by Aroclor
- Total Organic Carbon
- Total Dissolved Solids and Total Suspended Solids
- Chloride, Sulfate, Alkalinity, Sodium, Potassium, Magnesium, and Calcium

Consistent with the Multi-Area QAPP, one blind duplicate sample was collected for every 10 samples of each sample matrix for all analytical parameters, and one matrix spike/matrix spike duplicate sample was collected for every 20 samples analyzed for PCBs.

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MDEQ also collected 15 split samples – these samples were submitted to Northeast Analytical Labs in Detroit, Michigan for PCB analysis. MDEQ samples were not analyzed for inorganic constituents. MDEQ's validated split sample PCB results were sent to ARCADIS on August 10 and November 25, 2009 (Santini 2009a and 2009b).

Results of First Three Quarters of Groundwater Sampling

PCBs were not detected in any of the groundwater samples collected by ARCADIS or MDEQ at quantitation limits ranging from 0.025 micrograms per liter (μ g/L) to 0.052 μ g/L (the quantitation limit used by Northeast Analytical Labs was 0.025 μ g/L, while the quantitation limit at Test America Labs ranged from 0.047 to 0.052 μ g/L).

PCB analytical results for all samples (including MDEQ's split samples) are summarized in Table 3, and analytical results for inorganic constituents are summarized in Table 4. Full validation packages for the samples collected by ARCADIS are included in Attachment 4, and copies of analytical reports for MDEQ samples are included in Attachment 5.

Reporting of Fourth Quarter Groundwater Sampling Results

We appreciate your consideration of this matter. Results of the fourth round of sampling and analysis to be conducted in December 2009 will be communicated to USEPA and MDEQ when they are available, which we anticipate in January 2010.

Following receipt of the fourth quarter sampling results, it is our hope that USEPA would address a request to discontinue groundwater sampling in advance of needing to arrange for water level monitoring that would otherwise be scheduled in February or March for the first quarter 2010 sampling round. This letter is provided now to facilitate USEPA's early consideration of this issue. If you have any questions, please do not hesitate to contact us.

Sincerely,

ARCADIS

Stephen Garbaciak Jr., P.E.

Stephen Harbare

Vice President

/pt

Enclosures

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Copies:

James Saric, USEPA
Jeff Keiser, CH2M Hill
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Martin Lebo, Weyerhaeuser Company
Kathy Huibregtse, RMT Inc.
Richard Gay, Weyerhaeuser Company

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Tables

- Table 1 Groundwater and Surface Water Readings
- Table 2 Groundwater and Surface Water Elevations
- Table 3 Summary of PCB Samples Collected and Data Received through November 2009
- Table 4 Summary of Inorganic Samples Collected and Data Received through November 2009

Figure

Figure 1 – Groundwater Monitoring Well Location Map

Attachments (electronic only - included on attached CD)

Attachment 1 – Groundwater Monitoring Well Construction Field Notes

Attachment 2 – Groundwater Monitoring Well Construction Logs

Attachment 3 – Groundwater and Surface Water Sampling Logs

Attachment 4 – Validation Packages

Attachment 5 – Analytical Reports for MDEQ Split Samples

References

- ARCADIS BBL. 2007a. Former Plainwell Impoundment Time-Critical Removal Action Design Report. February 2007.
- ARCADIS BBL. 2007b. Supplemental Remedial Investigation/Feasibility Study Work Plan Morrow Dam to Plainwell (Area 1 SRI/FS Work Plan). February 2007.
- ARCADIS. 2009. Multi-Area Quality Assurance Project Plan for the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Revision 1. November 2009.
- Cowin, D. 2009. Letter from Douglas K. Cowin, P.G. (ARCADIS) to Michael Ribordy (USEPA) re: Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site Time Critical Removal Action Former Plainwell Impoundment Groundwater Monitoring Well Installation Plan. March 4, 2009.
- Santini, A. 2009a. Electronic transmittal of Plainwell TCRA oversight PCB analytical results for groundwater samples collected in June-July 2009 from Drew Santini, Camp Dresser McKee to Doug Cowin, ARCADIS. August 10, 2009.
- Santini, A. 2009b. Electronic transmittal of Plainwell TCRA oversight PCB analytical results for groundwater samples collected in September 2009 from Drew Santini, Camp Dresser McKee to Doug Cowin, ARCADIS. November 25, 2009.

Tables

Georgia-Pacific LLC Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site Former Plainwell Impoundment TCRA Quarterly Post-Construction Groundwater Monitoring

<u>Table 1 – Groundwater and Surface Water Readings</u>

	Coord	linates ¹	Reference							Staff Gage	e Water Ele	evations/N	lonitoring	Well Dept	h to Water	,					
Location	Northing	Easting	Elevation ^(2,3)	03.27.09	03.30.09	04.02.09	04.03.09	04.04.09									09.11.09	09.14.09	09.17.09	09.21.09	09.24.09
Staff Gage	J			00.21100	00.00.00	0 1102100	00000		0 1100100			00.10.00		00.20.00	00.20.00	00.00.00			30111100	00:21:00	0012 1100
SG-1	350394.4	12775769.3	-	707.45	707.55	707.65	707.90	708.22	708.18	707.88	707.88	707.25	707.25	708.15	708.18	707.00	706.97	706.93	706.94	706.80	706.92
SG-2	350979.9	12772024.3	-	700.75	701.00	701.20	701.65	702.24	702.28	701.55	701.55	-	-	-	-	699.82	699.79	699.70	699.73	699.50	699.71
SG-3	350360.5	12772101.6	-	703.30	703.30	703.37	703.44	703.85	703.82	703.70	703.55	702.50	702.55	703.50	703.58	-	-	-	-	-	-
SG-4	350988.8	12772385.0	-	701.30	701.55	701.77	702.10	702.62	702.61	702.05	702.08	700.76	700.80	702.46	702.52	700.18	700.17	700.13	700.13	699.93	700.01
SG-5	350076.1	12773475.4	-	702.80	703.00	703.18	703.49	703.88	703.86	703.42	703.40	702.23	702.28	703.68	703.75	701.70	701.70	701.66	701.67	701.48	701.64
Monitoring	Wells																	•			
MW-1	350961.38	12772432.61	708.92	7.25	7.09	6.92	6.72	6.30	6.28	6.64	6.72	7.91	7.86	6.46	6.40	8.46	8.49	8.53	8.55	8.68	8.56
MW-2	350711.55	12772517.19	712.32	10.51	10.37	10.20	9.96	9.54	9.51	9.87	9.96	11.12	11.08	9.68	9.62	11.69	11.72	11.75	11.76	11.88	11.77
MW-3	350339.20	12772701.62	711.66	9.38	9.23	9.05	8.80	8.38	8.35	8.73	8.81	10.01	9.96	8.54	8.47	10.58	10.61	10.65	10.67	10.78	10.67
MW-4	350154.43	12773098.22	713.54	10.79	10.65	10.48	10.26	9.83	9.80	10.05	10.25	11.42	11.37	9.99	9.92	11.99	12.02	12.05	12.06	12.18	12.08
MW-5	350154.29	12773466.74	713.69	10.67	10.52	10.34	10.11	9.69	9.67	10.03	10.11	11.27	11.21	9.85	9.79	11.80	11.82	11.86	11.87	12.00	11.88
MW-6	350846.49	12772491.10	712.07	10.41	10.24	10.07	9.90	9.41	9.38	9.74	9.84	11.02	10.96	9.56	9.49	11.55	11.60	11.63	11.64	11.76	11.65
MW-7	350555.17	12772534.59	712.85	10.85	10.69	10.52	10.29	9.85	9.82	10.20	10.27	11.46	11.41	10.00	9.93	12.02	12.05	12.09	12.10	12.22	12.11
MW-8	350171.40	12772825.18	711.85	9.41	9.25	9.07	8.83	8.38	8.36	8.75	8.83	10.05	10.00	8.57	8.50	10.65	10.67	10.71	10.72	10.86	10.73
MW-9	350900.48	12773169.10	717.09	14.21	14.13	14.02	13.90	13.52	13.44	13.63	13.81	14.90	14.84	13.67	13.58	15.42	15.46	15.49	15.53	15.58	15.55
MW-10	350302.97	12774069.99	712.72	8.18	8.03	7.89	7.65	7.30	7.28	7.60	7.67	8.76	8.71	7.44	8.39	9.25	9.31	9.35	9.36	9.48	9.39
MW-11	350789.24	12774553.73	712.38	7.33	7.20	7.05	6.82	6.45	6.42	6.75	6.83	7.85	7.82	6.57	6.50	8.26	8.31	8.35	8.36	8.46	8.38
MW-12	350726.89	12775210.90	715.35	9.07	8.95	8.85	8.54	8.25	8.25	8.57	8.62	9.62	9.58	8.34	8.33	10.12	10.07	10.12	10.13	10.23	10.15
MW-13	350420.23	12774429.71	714.36	8.93	8.82	8.68	8.45	8.12	8.09	8.37	8.47	9.47	9.43	8.24	8.17	9.93	9.99	10.02	10.05	10.13	10.08
MW-14	350664.31	12774948.40	712.45	6.75	6.62	6.47	6.23	5.89	5.86	6.17	6.26	7.23	7.18	6.00	5.94	7.66	7.71	7.74	7.76	7.85	7.80
MW-15	350412.99	12774893.18	713.83	7.72	7.64	7.50	7.30	7.00	6.95	7.19	7.31	8.27	8.22	7.12	7.05	8.74	8.79	8.82	8.85	8.92	8.89

Notes

¹ Coordinates are based on the North American Datum of 1983, Michigan South Zone.

² Water elevations at staff gages are based on the National Geodetic Vertical Datum of 1929.

³ Monitoring well depth to groundwater measured in feet. Elevation of the top of the well's inner casing was used as reference.

Georgia-Pacific LLC

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site Former Plainwell Impoundment TCRA Quarterly Post-Construction Groundwater Monitoring

Table 2 – Groundwater and Surface Water Elevations

								Water Le	vel Elevati	ion / Date							
Location	03.27.09	03.30.09	04.02.09	04.03.09	04.05.09	04.13.09	04.17.09	06.16.09	06.18.09	06.23.09	06.25.09	09.08.09	09.11.09	09.14.09	09.17.09	09.21.09	09.24.09
Staff Gages																	
SG-1	707.45	707.55	707.65	707.90	708.18	707.88	707.88	707.25	707.25	708.15	708.18	707.00	706.97	706.93	706.94	706.80	706.92
SG-2	700.75	701.00	701.20	701.65	702.28	701.55	701.55	-	-	-	-	699.82	699.79	699.70	699.73	699.50	699.71
SG-3	703.30	703.30	703.37	703.44	703.82	703.70	703.55	702.50	702.55	703.50	703.58	-	-	-	-	-	-
SG-4	701.30	701.55	701.77	702.10	702.61	702.05	702.08	700.76	700.80	702.46	702.52	700.18	700.17	700.13	700.13	699.93	700.01
SG-5	702.80	703.00	703.18	703.49	703.86	703.42	703.40	702.23	702.28	703.68	703.75	701.70	701.70	701.66	701.67	701.48	701.64
Monitoring Wells																	
MW-1	701.67	701.83	702.00	702.20	702.64	702.28	702.20	701.01	701.06	702.46	702.52	700.46	700.43	700.39	700.37	700.24	700.36
MW-2	701.81	701.95	702.12	702.36	702.81	702.45	702.36	701.20	701.24	702.64	702.70	700.63	700.60	700.57	700.56	700.44	700.55
MW-3	702.28	702.43	702.61	702.86	703.31	702.93	702.85	701.65	701.70	703.12	703.19	701.08	701.05	701.01	700.99	700.88	700.99
MW-4	702.75	702.89	703.06	703.28	703.74	703.49	703.29	702.12	702.17	703.55	703.62	701.55	701.52	701.49	701.48	701.36	701.46
MW-5	703.02	703.17	703.35	703.58	704.02	703.66	703.58	702.42	702.48	703.84	703.90	701.89	701.87	701.83	701.82	701.69	701.81
MW-6	701.66	701.83	702.00	702.17	702.69	702.33	702.23	701.05	701.11	702.51	702.58	700.52	700.47	700.44	700.43	700.31	700.42
MW-7	702.00	702.16	702.33	702.56	703.03	702.65	702.58	701.39	701.44	702.85	702.92	700.83	700.80	700.76	700.75	700.63	700.74
MW-8	702.44	702.60	702.78	703.02	703.49	703.10	703.02	701.80	701.85	703.28	703.35	701.20	701.18	701.14	701.13	700.99	701.12
MW-9	702.88	702.96	703.07	703.19	703.65	703.46	703.28	702.19	702.25	703.42	703.51	701.67	701.63	701.60	701.56	701.51	701.54
MW-10	704.54	704.69	704.83	705.07	705.44	705.12	705.05	703.96	704.01	705.28	704.33	703.47	703.41	703.37	703.36	703.24	703.33
MW-11	705.05	705.18	705.33	705.56	705.96	705.63	705.55	704.53	704.56	705.81	705.88	704.12	704.07	704.03	704.02	703.92	704.00
MW-12	706.28	706.40	706.50	706.81	707.10	706.78	706.73	705.73	705.77	707.01	707.02	705.23	705.28	705.23	705.22	705.12	705.20
MW-13	705.43	705.54	705.68	705.91	706.27	705.99	705.89	704.89	704.93	706.12	706.19	704.43	704.37	704.34	704.31	704.23	704.28
MW-14	705.70	705.83	705.98	706.22	706.59	706.28	706.19	705.22	705.27	706.45	706.51	704.79	704.74	704.71	704.69	704.60	704.65
MW-15	MW-15 706.11 706.19 706.33 706.53 706.88 706.64 706.52 705.56 705.61 706.71 706.78 705.09 705.04 705.01 704.98 704.91 704.94																
Groundwater - Surf	ace Water	Gradients	(ft/ft) (pos	itive gradi	ent indica	tes ground	lwater flow	v to river)									
MW-5 - SG-5	0.22	0.17	0.17	0.09	0.16	0.24	0.18	0.19	0.20	0.16	0.15	0.19	0.17	0.17	0.15	0.21	0.17
MW-1 - SG-4	0.37	0.28	0.23	0.10	0.03	0.23	0.12	0.25	0.26	0.00	0.00	0.28	0.26	0.26	0.24	0.31	0.35

Notes:

Wells installed during the weeks of February 23, March 2, March 9, 2009.

Reference elevations collected on March 24, 2009.

Staff gages installed during the week of March 23, 2009.

Wells developed during the week of March 30, 2009.

Staff gauge SG-2 was damaged by a high flow event in the River and was not available for the June 2009 sampling event. It was replaced and re-surveyed prior to the September 2009 sampling event.

Staff gauge SG-3 was not read during the September or December 2009 sampling events because ARCADIS did not have property to the private property where SG-3 is located.

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Table 3 — Summary of PCB Samples Collected and Data Received through November 2009

Comple					Pa	rameter, Unit, a	nd Concentration	on		
Sample Location	Date	Sample ID	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Total PCB
Location			μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
				Groundwater Su	rface Water Interfa	ce Criteria & RBSLs	1			
			NA	NA	NA	NA	NA	NA	NA	0.2
					Groundwater Sam	ples				
	4/16/2009	TS40014 [TS40015]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]
MW-1	7/1/2009	TS40032 ²	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
IVIVV-1	7/1/2009	PGW-MW1-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	9/22/2009	TS40042	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
	4/16/2009	TS40012	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
MW-2	7/1/2009	TS40029	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U
	9/22/2009	TS40039	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
	4/15/2009	TS40010	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
MW-3	7/1/2009	TS40027 ²	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U
IVIVV-3	7/1/2009	PGW-MW3-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	9/22/2009	TS40037	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
	4/15/2009	TS40007	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
MW-4	6/30/2009	TS40025	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
10100-4	9/21/2009	TS40035 ²	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U	0.052 U
	9/21/2009	PGW-MW4-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	4/15/2009	TS40008	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
MW-5	6/30/2009	TS40024	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
IVIVV-5	9/21/2009	TS40034 ²	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
	9/21/2009	PGW-MW5-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	4/16/2009	TS40013	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
MW-6	7/1/2009	TS40030 ² [TS40031]	0.049 U [0.051 U]	0.049 U [0.051 U]	0.049 U [0.051 U]	0.049 U [0.051 U]	0.049 U [0.051 U]	0.049 U [0.051 U]		0.049 U [0.051 U]
10100-0	6/30/2009	PGW-MW6-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	9/22/2009	TS40040	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
	4/15/2009	TS40011	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
MW-7	7/1/2009	TS40028	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
10100-7	9/22/2009	TS40038 ²	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
	9/22/2009	PGW-MW7-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	4/15/2009	TS40009	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
MW-8	7/1/2009	TS40026	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
	9/21/2009	TS40036	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
	4/17/2009	TS40016	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
MW-9	7/2/2009	TS40033	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
10100-9	9/22/2009	TS40041 ²	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
	9/22/2009	PGW-MW9-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	4/14/2009	TS40005	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
	6/30/2009	TS40023 ²	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
MW-10	6/30/2009	PGW-MW10-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	6/30/2009	PGW-MW10-03	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	9/23/2009	TS40046	0.048 U [0.047 U]	0.048 U [0.047 U]	0.048 U [0.047 U]	0.048 U [0.047 U]	0.048 U [0.047 U]	0.048 U [0.047 U]	0.048 U [0.047 U]	0.048 U [0.047 U]

See page 2 for notes.

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Table 3 — Summary of PCB Samples Collected and Data Received through November 2009

Sample					Pa	rameter, Unit, a	nd Concentrati	on		
Sample Location	Date	Sample ID	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Total PCB
Location			μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
				Groundwater Su	rface Water Interfa	ce Criteria & RBSLs	1			
			NA	NA	NA	NA	NA	NA	NA	0.2
				Gro	undwater Samples	(cont'd)				
	4/14/2009	TS40002 [TS40003]	0.048 U [0.049 U]	0.048 U [0.049 U]	0.048 U [0.049 U]	0.048 U [0.049 U]	0.048 U [0.049 U]	0.048 U [0.049 U]	0.048 U [0.049 U]	0.048 U [0.049 U]
MW-11	6/29/2009	TS40019	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
10100-11	9/23/2009	TS40044 ²	0.047 U [0.048 U]	0.047 U [0.048 U]	0.047 U [0.048 U]	0.047 U [0.048 U]	0.047 U [0.048 U]	0.047 U [0.048 U]	0.047 U [0.048 U]	0.047 U [0.048 U]
	9/23/2009	PGW-MW11-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	4/13/2009	TS40000	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U
	6/29/2009	TS40017 ²	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
MW-12	6/29/2009	PGW-MW12-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	6/29/2009	PGW-MW12-02	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	9/23/2009	TS40043	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
	4/14/2009	TS40004	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
MW-13	6/30/2009	TS40020 [TS40021]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]
10100-13	9/23/2009	TS40048 ²	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
	9/23/2009	PGW-MW13-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	4/13/2009	TS40001	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
MW-14	6/29/2009	TS40018	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
10100-14	9/24/2009	TS40050 ²	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
	9/24/2009	PGW-MW14-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
	4/14/2009	TS40006	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
MW-15	6/30/2009	TS40022	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
10100-15	9/24/2009	TS40049 ²	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
	9/24/2009	PGW-MW15-01	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
					Surface Water Sam	ples				
	4/13/2009	TS31000	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
	4/17/2009	TS31001 [TS31002]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.027 J [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.027 J [0.048 U]
SG-5	6/29/2009	TS31003	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
36-3	7/2/2009	TS31004 [TS31005]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]	0.048 U [0.048 U]
	9/21/2009	TS31006	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U
	9/24/2009	TS31007 [TS31008]	0.051 U [0.050 U]	0.051 U [0.050 U]	0.051 U [0.050 U]	0.051 U [0.050 U]	0.051 U [0.050 U]	0.051 U [0.050 U]	0.051 U [0.050 U]	0.051 U [0.050 U]

Notes:

- 1 Analytical results compared to applicable Part 201 generic Groundwater-Surface Water Interface criteria and Part 213 RBSLs provided in MDEQ's RRD Operational Memorandum No. 1 (Table 1, Column #3).
- 2 Split of the sample collected by MDEQ. Samples analyzed by Northeast Analytical Labs.
- * Duplicate samples are shown in brackets.
- * Samples analyzed by Test America Laboratory.
- * MDEQ split samples shown in italics.
- B Indicates an estimated value between the instrument detection limit and the Reporting Limit (RL).
- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- U Compound analyzed but not detected at a concentration above the reporting limit.

MDEQ - Michigan Department of Environmental Quality

MW - Monitoring well

NA - Not Available

PCB - polychlorinated biphenyl

RBSL - Risk Based Screening Level

RRD - Remediation Redevelopment Division

SG - Staff Gauge

μg/L - microgram per liter

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Quarterly Post-Construction Groundwater Monitoring

Table 4 — Summary of Inorganic Samples Collected and Data Received through November 2009

						Paran	neter, Unit, a	nd Concentr	ation			
Sample Location	Date	Sample ID	Calcium	Magnesium	Potassium	Sodium	Alkalinity	Chloride	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
			μg/L	μg/L	μg/L	μg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
					Grou	ndwater Sampl	es					
MW-1	4/16/2009	TS40014 [TS40015]	121,000 [129,000]	36,300 [38,600]	3,100 B [3,220 B]	30,000 [31,500]	320 [310]	44 [43]	180 [180]	667 [691]	7.4 [7.5]	15.4 [14.5]
IVIVV - I	7/1/2009	TS40032	129,000	34,100	4,120 B	38,600	320	59	150	653	7.1	14.1
	9/22/2009	TS40042	110,000 J	26,700 J	2,660 B	56,100 J	270	91	86	583	5.2	6.2
	4/16/2009	TS40012	142,000	29,300	1,700 B	53,000	350	93	110	706	6.1	20.1
MW-2	7/1/2009	TS40029	160,000	29,200	2,090 B	58,400	350	110	140	765	5.9	23
	9/22/2009	TS40039	150,000 J	29,300 J	2,010 B	65,500 J	320	120	130	739	5.6	27.7
	4/15/2009	TS40010	121,000	29,500	1,880 B	74,900	320	120	82	665	3.7	21.3
MW-3	7/1/2009	TS40027	122,000	29,900	2,090 B	63,500	320	120	89	712	3.4	13.1
	9/22/2009	TS40037	127,000 J	30,900 J	2,220 B	66,900 J	330	110	81	664	3.9	13.8
	4/15/2009	TS40007	115,000	27,700	2,120 B	73,400	340	130	43	655	4.8	11.7
MW-4	6/30/2009	TS40025	127,000	29,600	2,560 B	74,000	360	140	57 B	708	2.9	16.7
	9/21/2009	TS40035	125,000 J	29,600 J	2,080 B	74,900 J	360	130	57	671	5.4	14
	4/15/2009	TS40008	141,000	32,100	2,810 B	53,800	310	80	130	746	6.7	8.9
MW-5	6/30/2009	TS40024	168,000	35,400	3,140 B	51,000	350	80	170	833	5.7	13.1
	9/21/2009	TS40034	157,000 J	34,400 J	3,060 B	57,500 J	370	91	150	811	7.3	13
	4/16/2009	TS40013	119,000	27,800	1,940 B	68,400	311	110	67	639	4.6	16.4
MW-6	7/1/2009	TS40030 [TS40031]	123,000 [124,000]	25,400 [25,700]	1,930 B [2,170 B]	56,300 [56,600]	300 [300]	110 [100]	94 [96]	615 [613]	5.1 [5]	19.3 [19.5]
	9/22/2009	TS40040	114,000 J	23,200 J	1,770 B	63,400 J	270	120	80	583	5.1	17.1
	4/15/2009	TS40011	174,000	28,300	2,000 B	55,200	360	110	140	777	6.9	12.9
MW-7	7/1/2009	TS40028	141,000	26,500	2,170 B	59,900	340	110	99	671	4.6	11.8
	9/22/2009	TS40038	129,000 J	28,000 J	1,960 B	67,900 J	300	140	88	662	4.3	15.8
	4/15/2009	TS40009	105,000	27,100	2,100 B	80,300	300	160	42	625	2.6	9.1
MW-8	7/1/2009	TS40026	115,000	28,900	2,290 B	88,800	290	170	73	704	1.9	9.5
	9/21/2009	TS40036	104,000 J	26,600 J	2,070 B	94,100 J	280	160	57	637	2.7	8.9
	4/17/2009	TS40016	92,100	24,600	2,000 B	70,900	250	140	35	574	2	6.6
MW-9	7/2/2009	TS40033	90,000	23,100	2,400 B	62,700	250	120	26	515	1.5	6.1
	9/22/2009	TS40041	87,400 J	23,000 J	2,200 B	76,500 J	250	130	28	526	2.1	5.8
	4/14/2009	TS40005	198,000	29,500	1,120 B	51,100	420	89	160	918	16.2	25.4
NAVA / 10	6/30/2009	TS40023	193,000	27,000	1,620 B	48,500	370	89	170	921	12.3	29.4
MW-10	9/23/2009	TS40046	160,000 J [159,000 J]	22,900 J [22,900 J]	1,350 B [1,310 B]	58,300 J [58,300 J]	310 [310]	110 [110]	140 [140]	754 [754]	12.2 [11.9]	19.9 [20.8]

See page 2 for notes.

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Quarterly Post-Construction Groundwater Monitoring

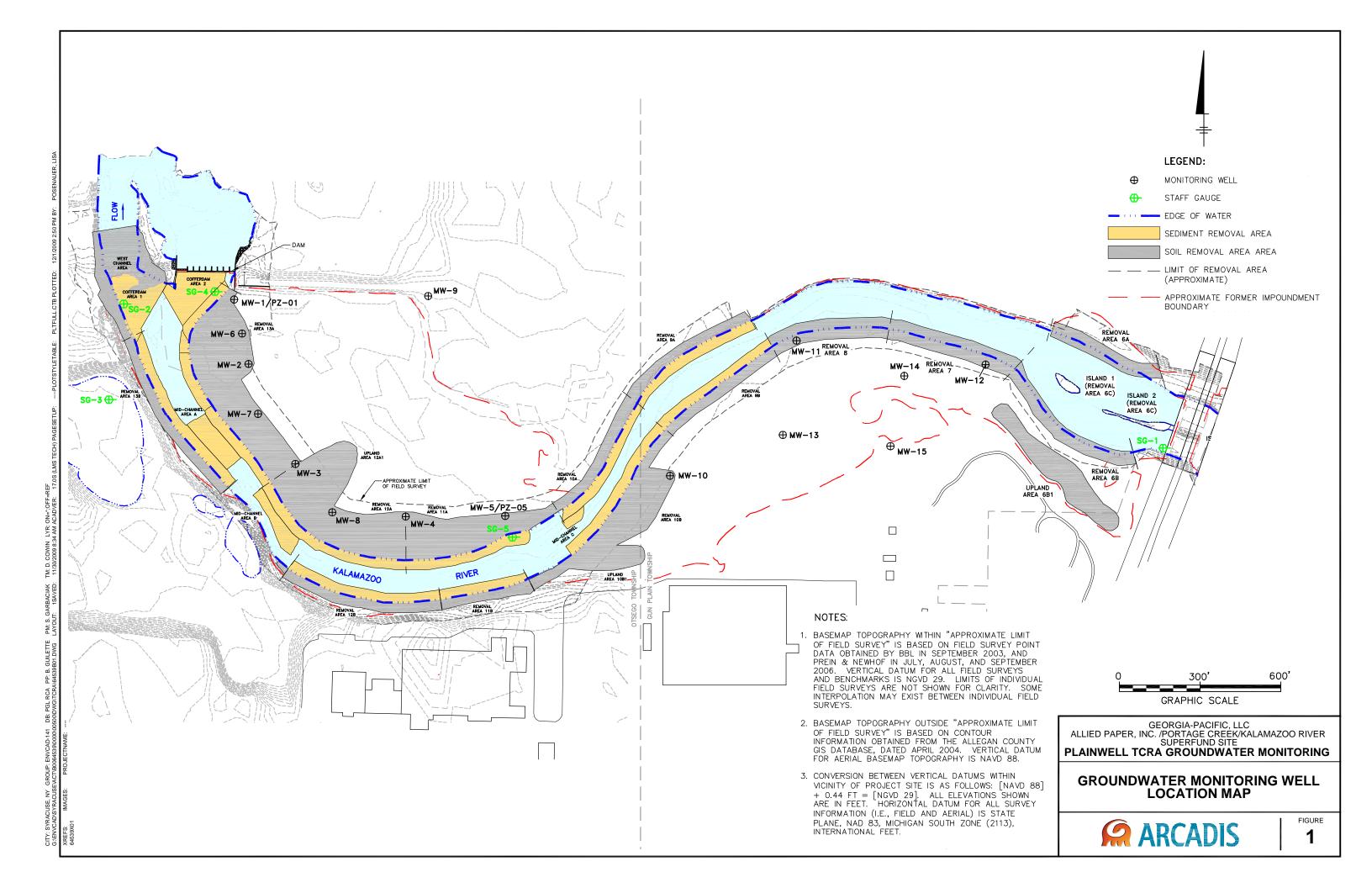
Table 4 — Summary of Inorganic Samples Collected and Data Received through November 2009

						Paran	neter, Unit, a	nd Concentr	ation			
Sample Location	Date	Sample ID	Calcium	Magnesium	Potassium	Sodium	Alkalinity	Chloride	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
			μg/L	μg/L	μg/L	μg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
					Groundw	ater Samples (d	cont'd)					
	4/14/2009	TS40002 [TS40003]	110,000 [109,000]	27,300 [27,300]	1,930 B [1,760 B]	59,700 [59,200]	310 [300]	100 [98]	64 [66]	619 [610]	4.5 [4.5]	13.6 [14.2]
MW-11	6/29/2009	TS40019	116,000	27,800	2,360 B	56,000	290	110	83	615	3.4	15.4
	9/23/2009	TS40044	105,000 J [103,000 J]	24,900 J [24,500 J]	2,020 B [2,060 B]	53,800 J [53,200 J]	270 [280]	82 [83]	62 [63]	535 [528]	3.7 [4.1]	13.5 [13.5]
	4/13/2009	TS40000	152,000	27,700	3,450 B	11,600	320	28	130	657	20.6	0.6
MW-12	6/29/2009	TS40017	190,000	33,700	7,490	14,300	460	21	100	749	19.5	0.5 U
	9/23/2009	TS40043	98,600 J	23,300 J	2,590 B	24,100 J	290	47	34	437	7.8	5.2
	4/14/2009	TS40004	92,200	21,700	1,600 B	69,500	280	120	29	568	2.5	13.3
MW-13	6/30/2009	TS40020 [TS40021]	93,800 [96,000]	21,400 [22,100]	1,650 B [1,830 B]	52,700 [54,300]	260 [260]	91 [92]	38 [39]	503 [516]	2 [2.2]	11.7 [11.8]
	9/23/2009	TS40048	93,200 J	21,900 J	1,770 B	67,000 J 27		120	27	508	2.5	14
	4/13/2009	TS40001	111,000	23,800	699 B	27,000	210	42	150	553	5.2	17
MW-14	6/29/2009	TS40018	95,300	19,000	5,000 UB	27,700	230			438	3.2	13.7
	9/24/2009	TS40050	92,100 J	22,100 J	1,180 B	41,000 J	250	66	50	446	3.3	12.9
	4/14/2009	TS40006	92,200	25,700	1,540 B	42,100	280	43	63	495	3.1	10.1
MW-15	6/30/2009	TS40022	99,600	25,700	2,220 B	46,300	280	96	35	506	1.2	9.5
	9/24/2009	TS40049	107,000 J	26,900 J	2,680 B	74,400 J	270	130	55	574	2.5	11
						ce Water Samp						
	4/13/2009	TS31000	73,300	19,600	2,090 B	20,400	200	39	32	361	7.9	7.6
	4/17/2009	TS31001 [TS31002]	75,500 [74,300]	20,600 [20,300]	2,040 B [2,050 B]	22,400 [22,200]	210 [210]	43 [43]	34 B [34]	371 [370]	7.1 [7.5]	7.7 [8]
	6/29/2009	TS31003	79,700	21,000	2,720 B	23,300	220	44	27	386	7.1	15.7
SG-5	7/2/2009	TS31004 [TS31005]	84,800 [83,900]	23,000 [22,800]	2,680 B [2,620 B]	27,500 [27,200]	240 [250]	51 [51]	29 [28]	407 [395]	6.2 [6.3]	14.1 [13.9]
	9/21/2009	TS31006	76,000	24,300	3,020 B	36,400	220	65	33	391	4.7	2.8
	9/24/2009	TS31007 [TS31008]	78,400 J [77,300 J]	24,900 J [24,600 J]	2,810 B [2,710 B]	36,000 J [35,600 J]	230 [230]	66 [61]	35 [32]	396 [407]	4 [4.2]	4.6 [4.5]

Notes:

- * Duplicate samples are shown in brackets.
- * Samples analyzed by Test America Laboratory.
- B Indicates an estimated value between the instrument detection limit and the Reporting Limit (RL).
- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- U Compound analyzed but not detected at a concentration above the reporting limit.
- MW Monitoring well
- SG Staff Gauge
- mg/L milligram per liter
- ug/L microgram per liter

Figure



Attachment 1

Groundwater Monitoring Well Construction Field Notes

	1/2/18 A 1/2	à
Projects	With the Both Class Star	
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STEVE BOOM (COM)	100 ys 0900 Dex Sun 6 ues me s rac of managero war	
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1-877-999-1272 259.4927		
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	. 1745 Port @ Hors/ Scal consil words	
		/

11/10/08 MW-12 (PILOT BORSE) Rew Kins ARCADIS CARY SULT, JOHN OCSON (M STEVE BOWN MATECO CARE SSLC TACKMONORD RIG, 414" TS454 2'X2" EQUIDMEST. SPC 15 pous, 30" FMI, 140 13 Aug Hames Acc(1) Blank 6" (V) TIME INT (Fr) concus 1328 1.65 0-2 2-3-3-5 6 × 3'865 1.3 1333 5-4-2-2 0.9' 1344 4-6 1-1-1-2 1349 6-8 1.4" 7-8-10-12 8-10 10 1356 12-1065 /le 1.0' 1400 10-12 3-3-3-3 O.8' 1404 12-14 3-3-3-6 - End of Boeing @ 14' As Belie Training Goods
TO Guse of ~ 20 Gripos Barros & Joseph Goods * ~7-14 HIBH K STUSS/GENERS

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0-1-15 DARK BRO	w) about Sit Tracel Sus, says	
1-15-1-65' Z16HF B	Rann From Sus, TRACE ORGANICS (SHRIS)	Tuace
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uet .	The result of th	
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80-90 Ochersta	Will froctors, Little from thereigh	120050
	aun frocom, Lorre from Grever, The	ase Sit.
12-128' SAA.	nane) - Ciera	100

11/10/08 MW-14 P.W. Boeix RON KIN ACCADIS GARYSWITH, JOHN O'SON COM STEVE BOOM MATECO CINESS LC, TACK MONTOS Rib, 41/4"ID HSA, EQUAMENT 2"x2" SPC, 5000, 30" fall, 14018 ANOHAMMER int (fr) Acc (br) Blows(6") TIME Courses 1539 0-2 2-2-2-2 1543 2-4 1-1-1-1 T 4.5 ACB AVALYSIS 1546 4-6 1-1-1-2 6-8 1552 1-0 4-4-4-4 8-10 1-0 N/A-DIDITIET N/A 1556 0.9 1600 6 10-12 2-3-3-4 1.0' 12-14 1605 2-3-3-4 1608 14-16 0.7' 3-3-3-5 End of Borist @ 16 BGS. Boris Trume GROTES 10 GRASE W/ - 20 GAINOS TYPET DETCHS/5% QUIDIR 6RON * - 6-16' HIGH K GALEIS/STUSS

11/10/08	Mw-14 P.co Boeisb	
Doreigi .	Ascepta	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and of the I sus the obbis	Cars) sens
 	ou Sun, taxe Sig, Loose, Suns	++++
0:35 0:55 LIGHT GRAY	JCHAJELSIN DAYS	+++++
0:55-1.15 DARGERE	and organic Six THEOREGIES Cloon	s), sap
1.15-1.7 Dar star	JS, My & SAND, TOURE OFFWET CHEM	y secresor)
Mosfart		
2-0'-3.0' 5AS, WIT		
3.0'-3.3' Gry BROWN	F Saw Take MOC San Take S	v. wo
	y, Trans A Says, are	
	BROWN A SAN CITTLE SID THERE	NOC San
	PALET, SATELATES & (LIGHT GAY SILT IN	
	J Froc Shus, TAKE from Gravel, The	
		344 374,
80-90 Sa, GAZZ	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	b 10 MAKGAY (2 ~ 8 7 865)	
	From Grace, LITTE LOC Sms, 7	ZLACE SIT
Stocerated		
12.0-13.0' 554		
14.0'-14.7' SAA		

14/11/08	***	Dring	606	•	(DA)
WYATTHE	OUESAST,	60 S			
0630		1	les TONS	DellIndo AC	71v;1463
0730-0800	Salery N	' • '			
0800-095	DX, ES;	RICH (TEXA)	1) 60 TO A	W DSHE	N
	10,400 TO 60	Has be	DiHES, NU	3" HJDIN	- sossoe
0830				TOWN SHIP CO	
***************************************	Betind W	scarer.			
0930-1015	1	ear Mw-11	, masure	10 MW-13	
1100-1200	TRANSIE 61	POUT MW-1	3, HIND AUG	sine Steam Co	and AUGES
* · ·	700LX6, M	BILIZE MU	2-15		•
1200-1300	MATEGO Lu	WOH, DOC/	EJ SOUK	TO DOG C.	A Bougast
A	!	!		1 ATTIONS . DOU	
	ASS Me 10	JUBUT MA	J-14 (4-6°): MW-13	(G-B')
****	FOR PEB An	19450 2414	747		,
1400	i .			NG WHILE DE	11 -18 70
	Avois "SNAF	IN Samples	. MATECO 70	reje ver i	cepa)
-	MW-10				
1400 - 1500	TRUME 660	WT MW-15,	TEAM CHAN A	oues, mosici	y 70
	MW-10.				
1530-1800	TRUME 6	ROY MUZ-T	PILOT BORN	6, HIGH AUS	ivne Stoay
***************************************	Clew Rib / A	wees/100Li	6, MOBILITE	616/0QU,D 70	NOCT4
WASARINE BROWN AND ALL REPORT PROCESS SEASONS LINE	Size of Ru	ll 10 Cowjin	ve Picor Boe	<u>62</u>	WATER THE RESERVE TO THE RESERVE THE RESER
1930-2045	CAI W/	DOUG C.			
	(B)				

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		-																				and the same of										

11/11/08		MOTI	Geor Loxus		(BOK)
ARCORS	ROO KUH				
MATECO	6AR/Su	Lr, JOHN	OLSON		
COM S	EX BOOM	i	ELMER	UAD WAGOU	R
EQUIDMENT	1	LCTMIKE			
	Spirspoo	5,30" Fall	1407B AJIC	Hannet	
	, ,	'			
TIME	INT (FT)	Dec (IT)	Blows(6")	(W)	COMMENTS
085le	0-2	1-3	2-3-5-9	8	
0902	2-4	1-6	2-2-2-2	4	Z3'
0909	4-6	0.7'	1-1-1-1	á	
0916	6-8	051	1-1-1-1	2	
0918	870	0.6	3-3-4-6	7	
2590	10-12	1-01	7-4-7-6	1)	
0925	12-14	0.7	3-3-3-3	6	
	14-16 BB				10 TO
				17 700700000000000000000000000000000000	
	- END of	BORWO @ 14	1 BUS. ROL	30 Therein	(Anus)
		1 ~20 0			
	BUTONIE	ř .	,		
				A CONTRACTOR OF THE CONTRACTOR	
y 4.	35'-14',	HOHRE K S	guas/min	as	
77			<i></i>		
The second secon					

11/11/08	MW-11 Pro-Boens	(DDA)
INTERVAL	Aesca: pro	
0-0-15 04	uc sean ochwic Six muce ochrico, sup.	
0.15-10.60	ay Siry GIAY, MOIST	
	and from stand, Tought Siers, Loose, Mass	
	my SILV C/AV, Taxe OFFICE, Soy	
2-65-2-91 616	of Begon A Sous, Three Sit MOIST	
1 1 1 1 1 1	K 694/ Siry Ciay, Truce Hybry Debrases Debain	5 110,57
0.000		
40 435 5	A4	
	4 Stown From Sha The CSLA TOKES TO	492
Sie	(S) 547Cerson	
	61776 Sur	
8-0-8-6' Gra	1 Stor Aron Sus THER C Sas, TRAW FORES	ried.
1	LIMITERASITA TRACK TRACE STENS, L	
	2475D. /	
10.0-10.71 5	<u>ad </u>	
		case,
Sarce		
12-0-12-> 6	my sound from savel, Truce from Gravel, Truce	50
3	OR SAMAYOR	
		7

n/n/08		MW-13	PROT BORK	26	(2)	1/11/08
ARCANO	ROW KUH	1				
MATE CO:	i	H, JOHO	Costo	÷.		Tark
<u>com</u>	1	on west		VAN WAR	iel	0-0-1
Equipment	CME SS	LC TANCK,	mounters Riv	6,4/4"IS	HSA, 2"x2"	0-1-0.3
	SALITSPA	105, 30" AM	1, 140 1B A	MHAMMER		
The second secon		,				p.3-0.9
TIME	1NT (4)	Sec (4)	Blows(6")	_N	Conners	0-55-0-
1012	0-2	1.4'	2-2-1-2	3		0.85 - 1.9
2501	z-y	0.4	2-2-2-2	4		
1027	4-6	0.7	1-1-1-1	ے	A. 05:11	20'-2-
1029	6-8	0.6'	1-1-4-5	5 ₹ 7.5	1 -14 -12	4.0'-4.
1033	8-10	0.6	4-4-7-9	11	PHOTO 8242	
1038	10-12	0.7'	7-9-14-15	23	P400 8243	6-0-60
1045	12-14	0.2'	5-6-8-10	14		
1047	14-16	0.91	3-4-6-6	10		80 8.6
1051	16-18	0.5'	4-7-3-5	/0		10.0 - 10
	-EN of B	dixe 18's	65. Boeis67	Bennie GRa	160 m	12.0-12.
THE STATE OF TAXABLE SALES SEED OF THE SALES SEED OF THE SALES SEED OF THE SALES SAL	GRAPE W ~	25 GAILOUS 7	YPE I FORTISM	0/5% Bever	ONE GLOT.	14-0'-1
p		***************************************				14-0'-1
4 6 2 - 1	d . ' . l	., , ,	/			
x b .0 -1	8.0 H16H	K Grace S	/ SAVOS			He
<u></u>						
DE MICHEL DE L'ANDRE D						
			<u></u>	i L		

ρl_b	108		MW -1.3	Pico	- Bali, X		(B)
	TATICAL	AL		Deser	Ana		
0-0	2-1' /	44x Bland	26bic Sia		-	Any O	
0-1-	0.3"	OPARE BLO	w from	Suo, L	DTE C SAL	, rune for	tiel, Loose,
+		DAYA			A		
	0.55		k /		FSND, NA		
255- 285 -	0.85				Sir, Day		
- 23	.,	Olive Brown	U CIVIY CIA), / <i>r</i> 44	CHINNY MG	dises winner	y crows,
2.0'-	2-4'						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	4.7'		26 TO DAR	K 64/1	Arun (Co)	ate -4.5	cu/slan
(From Sas				10.100	
5-0-	6.6'	Graf Blown	1		V / 160	TONG STORE	7,
3.0' 7	1 1	Six Media SAA	400T, LOOS	e, Stria	UTED NAN	M Norzic Acid	> #
	10:7		1144 64	15:41	COLORATION	(ma) Careas	
¥ , v	10-7	and Genel.	7	ייט אייטיי	scoloe+1100,	SAY CACA	aes agaises
2.0-	12-2'	Gravel in 7	p of Stoe				1
	`-14.9	t. F F F F F			e from Grace	1, TACESIET,	Luse, Same
4.0	-16.5			wel, Li	title for Say	s, truce Sion,	Loose,
		SATURAD					
K	+		_	A			>

11/11/08		MW-15 F	w Bolist		ØD :
ARLADIS	Low Ki	₩			
MATECO:	GAR/SW	IT JOHN	Sod		
<u>CSM</u>	1 .	i ·	OD ELMER	VAN WAGE	el
EQUIPMENT	CMESS	LC TRACK A	nouves k	6 4/4"ID	454, 2"x2"
			14DIB AUXO		
		,			
TIME	INT (Gr)		Blans (6")		Convers
1313	0-2	1.5"	1-2-2-3	4	
1321	2-4	0.9'	2-2-2-3	4	
1326	4-6	0.51	1-2-3-3	5	
1329	6-8	0.8	3-3-4-4	7	▼>'
5881	8-10	0.8'	3-5-4-4	9	
1336	10-12	1.2'	3-4-4-7	8	
1342	12-14	6.61	3-6-4-4	/0	
1346	14-16	0.41	2-3-3-4	6	\
1351	16-18	0.0'	3-3-3-4	6	
-END of Box	56 @ 18' BG	S. Boens Th	umit Clark	D 70 6140 W	./
~ 25 GAIS					THE PROPERTY OF THE PROPERTY O
* 6.Z'-	18.0' HIGH	a 16 Grace	5/54005		

1/11/08		MW-15 Pro BORNE	
7.77			
0-0-2'		Klasic Sig Tracempountary	Debuses office Am
		Clayers or trace Forms, Tax	
1.05-1.5'		w I Sus, The Sit, Days.	
20' -2.35'			
		SAD, THE SID, THE MEN	ul, nois
4.0-45	544, 547	ina768	
	544		
) from Sus, Line CSus, 7	me fon our,
1 4 4 1. 1. 1	1 1 1 1 1 1	OBS SATURD	
1 1 1 1 1 1	1 1 1 1 1 1	FOC Sus, LITTLE From GULL, 7	THE SIT, SATURTED
10.0 -11.2	544		
	1 1 1 1 1 1	0 Dec 64/e~124/865	
1 1 1 1 1 1	1 1 1 1 1 1 1	Gravel, L'irre Poo Sas, Sarar	MED
16-0-18.6	(تد مرد ا		

MW-10 Picor Barist 11/11/08 BA ROD KIND ARCHAIS GRESION, DOWN ODON NATECO. STELL BODY WESTER ELMER LANGUAGNER csu EQUANCET CHESS LC TACK MONTED RIB. 4/4"DA HSA, 2"22" Sphispoors, 30" fail, 140 B ANDHAMMER Blows (6") (NT(FT) Acc(AT) M TIME Corners 1500 1.3' 2-3-4-4 0-2 1-1/12-1 1506 z-4 1.0' X 5 1.0' 1509 4-6 2-1-1-1 2 7-5-13-8 18 N/A 11' 6-8 1514 0.4' 7-5-13-8 8-10 1517 PHOTO 8244 0.8' 7-4-4-7 10-12 1520 1527 6.9" 12-14 4-5-7-9 1529 3-4-4-6 8 14-16 0.71 - Eus of Boeino @ 16 BGS, Bolwo Trumie Glassos To Grice W/~ 20 GAILORS TYPE I POPULAS / 5% BENEVITE GROWT. * 6.0'-16' How K Conces Sources

nlu/oe	MW-10 Avor Boxis	D
Ivers	Al Descension	
0-0-21	DARCBRAND ORGINE Six, TAME & SUD, TRACE ORGANICS, L	وسط
	Sheet Bland from Sus, Little C Sug Tung from 61	
	Me Sir, Loose, Dangs.	
2.0'-2.35	544	
235-30	Graf Brown Gras is to Dack Gray Sury Cray, Take OLS	DILS (HIGHL)
	Degress) says.	
40-5.0	Dark any Blave & Sons, Touch Little Sio, Touce Siers,	STEWNEY
6-0-7.1'	LIBERT GUY BROWN Sury From Genel, Linne for Sans, L	
	STRINGS & LIGHT GONY CARREOUS DIS COLONION THEOR	
	NOTRIC ACIO +.	
8.0' - B.4'	SAA, Above becamy DUE TO C Gurey in Tip of State	
0.0-108	LIBHT GUAL BEADO FROM Genel, LITTLE LOC Sons, Take	Sit, SATING
	LIGHT GAY CALCAREOUS SIX TOROUGHOUT, NOTRIC+	
2-0-12-9'	DACK GUY BROWN FOR SAW, LITTLE FOUR GOALES, TAKE S.	ò,
	LOOSE, SATURATED.	
4.0-14.71	SAA	

11/12/08		MW O7	Tros Boles		(20)	;	ון או	108	
ARCIDIS	Row Kuss	3							
<u>штесо</u>	_	F, JOHN O	⁄కంచ				L	TER	VAI
CAM ST	eve Boan					,	0-1.	8	GMY
UESTON E	TIMER WAS	WAGNER			-		2.0 -	2.25	' 54x
QUANUT	CMESSE	THEE MO	WIER Rib.	41/4" ZD HS	A, 2"LZ'	_	2:25	3.0	5
	SKITSAM	us, /40/A	somme	e, 30" FAU		Γ	3.05-		ORANE
<						+	4.0 -	7.6	يهجيا
TIME	INT (fr)	Acc (fr)	Blows (6")	يد	Conners	.	6.0	6.4'	on
1045	0-Z	1.8'	3-1-3-3	4				. 6	oriel,
1050	Z-Y	1.5'	2-2-2-2	4		. -	8-0-1	3.2'	544,
1053	4-6	0.6'	2-2-2-2	4	NO RECOUNTS.	-		17	74@Si
105B	6-8	0.4'	1-2-1-1	3	TRIED 3 SAMO	1	10.0	11.1	orm
1106	870	0.7'	1-7-1-1	3	`			1	oose s
1/09	10-12	1-1'	2-2-3-3	5			12.0'-	12.7	' Gu
1115	12-14	0.7	2-2-3-4	5	-				SATU
1118	14-16	1.2'	3-4-2-5	6			140.	14.8	6un
									hoose,s
	- End of B	DEIXE 16 18	65. Box 16	Munit Gla	700 70		14.8	-15.2	' DA
			ET AND						Loose,
	6ROJ.	,							
							<		-
						-			
	× 6-16	WIGH K	Smas/60gm	19		-		*	WA

11/12/08	MW-07	PILOT BORSO	
INTERVAL		Desce. små	
>-1.8' 6 my sean	Singley,		* مسم
0-275 544 *			
1 7 1 1 1 1 1	11.11	o race Six Loose stys	4+
1	wof Guo,	True S. J. Louse, sup.	
↑	<u>-</u> - - + ⋅	and, aso.	
0-6.4' Omoch	leavil Surf	/ from Sus, Large (Sus, race	Soc.
Greel, Low			
		se Brain from Sun, Ture & Ge	rel,
True Sur, Lo			
		ist, Touch live for Eurel, Tax	esut,
Loos Sarci	-	┤ ┤┼┤┼┤┼	+++
!		us, Tune & Genel, Tune Sir, Low	se,
40-14-8 Guy sea			
		A TULLE/ Lime Lown Games, Truce	Sig
4.8-15.2' DARK Gre	Long Ga	avel, Girry Loc Sus, Tung 50	
hoose, sarch		avel, 2,774 2706 SAD, Tugo 5,0	
	++++#		>
* CUANT TO	DOUBLE O	75e 0 - 3/4'	

12/08		MW-08 +	cor Boe: 26		RES
easis	ROW KUM)			
4 <i>reco</i>	GARY Swil	4, JOHN 0	SOU		
<u>su</u>	STEVE BO	au			
Vesto-O	EIMER VA	N WAGNER			
nsmer	CMESS	C TACK M	aros Rib	414" IO H	SA, 2"cz
LOCATION CONTRACTOR CO	Sparspool	5, 140 16 A	4 TO HAMIC	2, 30° F411.	
îne_	INT (Sr)	Acc (fr)	Blace (6")	<u> </u>	COMMENTS
325	٥-٢	0.7	5-6-4-3	10	
336	2-4	0.3'	2-2-2-2	4	
341	4-6	0.9'	2-2-3-3	5	¥ 6'
343	6-8	0.4'	Z-Z-Z-Z	Ч	
348	8-16	0.9'	1-1-4-6	5	
351	10-12	0.9'	14-10-3-3	/3	
357	12-14	1.01	1-4-5-7	9	
407	14-16	0.6'	2-4-7-9	/1	
41]	16-18	6.9'	4-6-11-9	7	
414	18-20	0.9'	4-5-5-5	1 0	
119	20-22	0.8'	2-2-4-7	4	
427	22-24	0.3'	2-2-3-4	5	
LOCATION	10' N of	Stabo Loc	atioù (Staku	s Loutin on	YN Bom)
N - 18	مها سرمادند	s A a'v	mnic brown		

11/12/08	MW-OB Picor BOR.36	Øs)
INTERNA!	Desce pria	
0-0.7' OPENSE &	down from bearer, Some & Sua/Sor, Three is	70°C
	ace cuy, Derke, Sung Caceess Road Mercen	را.
2.0'- 2.3' 544	┊┥╻ ═╃╉┨╀╫┼┼┼┼┼	+++
	My Sin/ Clay, Taxco Octobrics (10075), Dayo	++
	Edward Sas, Take wood sand Take Lower, Takesir, a Bedward Ling Loc Sus, Little Lown Genel, Lower, Sex	
30-8.4' 544	, , , , , , , , , , , , , , , , , , , ,	urjas
	and She, Time mor Sue, Tame Siv, SATTENTON	
	y Fran Give (Wite & ACIS MANNEY +)	
0.0'-10.3' GMy BE	and from Sus, Love from bunel, race Six, soums	
	22) Lans, racesir, squares	
	Dist to Deck GuyBean from Sus, Love C. Sus, Tame,	Krom
.1. 1 1. 11 1 1 1 1	THE S. IT, SATULATOR, GUARTHAN CHANE ~ 12.5 BGS	
	wishon Sans race (Sas, Trace from Give, Trace S, o, S	
	of from Genel, Little from Sus, Tare Sio, Loose, Stream	
	May Froc Saw and From Engle! Tune Sir, Coose, Sarry	
20.0-20.8' SAG		
22.0 - 22.3' 544		

1/12/08	MW	-06 f. cor	BORNS		€
ARCADIS	ROW KIM	9			
<i>MATECO</i>	GARY Swid	, JOHN O/S	ov.		
<u>on</u>	STEVE BOO	m <u>Dea</u>	Axs.		
vesnos	EIMER U	IN WHENE	e		
anomer	CMESS!	C THACK M	avos Rib	4¼"±0 HSA	, 2" = 2'
	SPLITSPOO	æ, <i>140 i</i> 8	ANTOHAM	er, 30" hm)	
TIME	INT CAS	Acc (for)	Blows (6")		COMMENTS
1600	0-2	4-5-5,	1-2-2-2	4	
1607	2-4	2.0'	2-5-5-2	4	
1608	4-6	0.8'	4-5-7-5	12	
1612	6-8	1.2'	9-1-1-1	2	₹ 8'
1615	B-10	1.2'	1-1-1-2	2	
1618	10-12	1.6'	4-4-6-10	10	
1625	12-14	1.2'	6-6-9-10	15	
1630	14-16	Z·0'	6-7-9-10		
1634	16-18	1.3'	1-2-2-2	4	
/638	18-20	0.71	1-2-2-2	4	
1641	20-22	0.9'	2-2-4-5	6	
1644	22-24	1.3'	3-3-4-6	7	
	- Ens of L	blub e zy	B65, BOR.	26 Trunig	6lov140 70
	(1400 112 1-	30 (al min	T DORTAIN	/5% Bevre	WING GRA

n Irlo8		11W-06	Pio	- SOR.	4	
TYPRI	J I		Desc	فهرم		
0-2.0	GMy Snyc	wy , To	! ! !	! ! ! !	2440 =	
2.0'- 4.0'	544,640 X	L.		1 - 1 - 1 - 1		1 1 1 1 1
40-45	Olice BROW	2 Sing C	la Ta	ne erba	(د نواسر عاد	
4.5-4.8'	ORLOGERA	o) suc	, 1,000	em grac	1 Trace Sic	TIWET
60-22	' ORWEL BED	wo from	1540	Tures	ir sarce	MED .
8.0'-92'	1			-		
10-0-11.6	SAA					
120-132	SAA					
140'-15						
	o' Gray Brow	17 Frocs	5000	a Eman	Green Lac	50 54-
	3' Gray Bro					
18.0'-18.					1 600 11/2	-0C R , 3470437
20.0 - 20		3/2			For Gise	1,111111
		1 1 1	1 1	, ,,,,,,,,	FRA GIGI	el,
720 2	7005e, SA 33 SAA	حرورها				
22.0 - 0	JJ JASA					
			4		 	+
-						+P++

MW-02 Aur Boeis 11/13/08 W LOO KIND ARCADIS MATECO GARY Swift, JANN 01500 STEVE BOOM com EIMER USW WAEDER EPA MICE WESTED CNESS LC THICK MONTED RID, 44 ED HSA, Z"EZ" SPLITSPOOS, 14018 AUTONAMILE, 30" FAII Acc(4) Blows(6") INT (A) TIME Commans 0956 0-2 2.0 z 1-1-1-1 ¥ 31 2-1-1-2 1.7' 1007 2-4 4-6 1.0 5-9-13-12 1004 6-8 0.7' 1018 5-9-11-17 8-10 0.4' 6 1501 10-4-2-2 0.2' 3-3-5-5 1025 18-12 0.4' 1031 41-51 20 12-12-8-7 1.51 14-16 7-7-7-12 1035 55 81-51-01-5 16-18 1.0' 1047 0.8' 7-8-10-10 18 18-20 1051 - END of BORYGC 20' BGS, BORING TREMING GROWN TO GRANGE W/ ~ 25 GAIS BURDWIFE QUICKBROUT. A NO PLATFORM CONSTRUCTED YET USE STATE ETCLATED, CHECK NOW Elevation After platform is Bur for potential Screen planned. * 4-2-20 HIBH K SAMS GALLS

11/13	08		50-WM	Pror Beix	2
	INTER	الما	Δ	SCE-Dornio	
			. 1 1 1 1		
0-2				Tane Inthon	
	CA	francis, TAGEC	ebains, m	ouss. st Dougs	ecase
2.0	2.9	544 \$ DOV	BIE CASE		
3 3 1	1 1 1	LIB Blow F	1 1 1 1	ior Samues	
1 1 :	1 1 1			Me Sir, They 5.	WIS CAMMAN
	1 1 1	2,meic +	,		
	2 'ج./				
7-6-5	-0 -	- 10 MT COMAY ISLEOWS	s t womsa	D, LITTE C SMO, L.	TTLE From
 		mel, True Sir,	DOSE, SATU	4700, WITRIC +	
60	6-2'	SA4			
8.0 -	8.4'	DARK GLY From	1 Genel, 2	IFTH LOCSUS, TO	ang Sir, Saranga
10-0	10.21	544			
12-0	- 17.4'	Coursen of fro	CSWS 47	TR From 614el, Tank	Sim came
14.0	_ /4.61	SAA		, , , , , , , , , , , , , , , , , , , ,	isa, saiwa
11-0	_//2/-2	> 11647 6144 BA	and from	Sto, Truce C. SNO,	TRACE From GRALL,
		TAME SINT, SATUL	MED.		
16-0	-170	SAA GAASIJ6	TO 41647 61	my Beaw from Sa	D. TRICE
				N 2 e ~ 16.5'	
18.0	-18.8			n Saus, 7,40e f 6,00	
	Ĭ	TAGESIO, S	1 1 1)	
			1 10 T		
					

11/13/08		MW-01 F	LOT BAR.36	(PZ-01)		11/13/08	Mu
ARCADO	Row Kith						
MATECO	GAR/SWIFT,	JOHN OISON			-	Timeus	,
COM STE				-		0-041	ony Bean Si
Weston El	MER VAN WAGI	æ					percesanos,
EDYDMEOT	CNESSLC	TASCK MOW	TO Rib, 4%	به دلا هو" y	2"22"	0-6'-1-2'	GMY BROWDS.
	SNITSAOOS	1401B AUTO	Homuet, 30	"fa11		2.0 - 3.0	SAA N DON
						4.0 -6.0	No Recover 2"
TIME	Mr (fr)	Ac (b)	Blant (6")		COMMENTS	6.0 6.9	DARK BROW ORL
1310	5-0	1-2'	4-4-3-2	7		6-9-7.21	Comp Score I
1316	2-4	1-0'	2-2-2-3	4	NO BECOVE / Z'	8.0-8.5	544
1319	4-6	0.0'	2-2-5-2	7 16	54000, TZ / 3"	8.5.88	Olive Bears 1
1331	6-8	1.2'	W04-2-3-5	5			Sir Samues
1335	B-10	0.8'	3-5-8-10	/3		10.0 40.41	GASI BEDWILL
1338	10-12	0.4'	5-8-12-9	20		12.0'-12.7'	Drek Gray Lo
1344	12-14	0.7'	10-8-5-5	13		14.0'-14.3'	544
1348	14-16	0.3'	5-5-8-8	13	•	16-0-16.3	Dazie Guy Fr
1353	16-18	0.3'	2-5-2-5	7		18-0'-18-6	
1358	18-20	0.6	2-3-5-5	в		20.0 - 22.0	
1400	Z0-ZZ	NR	5-7-8-11	15		22.0 - 22.5	Guy Brown
1407	22-24	0.5'	7-7-7-7	14			S. S. LOOSE, S.
- 2'zs sc	4 40 PVC 0.01	O"SIOTSCALL	3-13'865	•	,	•	
- 2"20.80	4. 40 PUC RIS	ER ~3' A6S	- 3'865				<u> </u>
- 6000 4:	5 "610BAIF	LAR DACK"S	Sicili Suppose	c 2-13'86S	(7 BMS)		
	duction by	1 -					
	T. C. L. C.						

11/13/08	MW-01	Pror Soex	(PZ-01)	
Tropers	1 1 1 1	2.070		
0+0-41 Grey Blan	→ → →		my Truck 64	
	1 1 1	TANK MIN		
	1 1 1 1 1	y, Task okbis	s, Chys X Do	ibic case
1 1 1 1 1 1 1 1 1 1	DOUBLE CAS			
	12'/3'5/			
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Japaj Snot, CIT		‡
6-9-7-2' Gry BRON	D/Sus	ruse Sit, Loo.	Se, Sarumo	
8.0-8.5		+		
		icuel, Little LS	MD, TAME MIOC	Cins, Trip
Sur Sonn	1 7	1 + 17 7		
1 1	- + +	mel, Thur Loc		
1 1 1 1 1 1	1 Foc Su	s mo from bu	rel, Sarvins	۵.
14.0 - 14.3 544	+	- + - -	+++++	+ - -
	JEromas	nel, Tane Iro(.	Ses, Snumb	
18-0'-18-6' SAA	/			
20.0 - 22.0 DO Rea				
		Genel, Cittle F	oc Sug Tara	
S. 5. Loc	se, Samon	Α		
		<i>/</i> /		
				\supseteq
	1 1 1 1			
	 			

11/13/08		MW-04	PILOT BORIS		(B)	- : - :	11/13/08
ARCADIS	Row KIHW					-	
MATECO	GARY SWIG	, JOHN OLS	•>			- :	INTER
<u>GDM</u>	STELL BOOM					- '-	0-6
Westoo	ELMER VA	WAGOER				-	6-0-75
ED, SMEOT	CME 55 1	C THACK MA	WED Bib,	1/4'50 1/5	4,2"x2"	-	
	SKITSPOOR	5,/4018	4 понатися,	30" LAI)	·	- :	8.6 - 8.0
TIME	wr (br)	Acc (br)	Bows (6")	<u> </u>	Connects		·
1600	0-6'	~ COUTIJUA	S HSA THROUG	N ZZA SiOU	e PMO		10.0 - 10.
1603	6-8'	1.5'	WOH-WOH-1-1	1	¥ 7'	_	
1608	8-10'	0.6	2-2-3-3	5	PHONS BLY)	_	12-0-12-8
1614	10-12'	0.5	1-1-1-13	S	8248	_	12.2-12.9
1620	12-14'	0.9'	4-4-4-6	8		_	14.0-14.3
1622	14-16'	0.7'	4-4-10-6	14		_	14.3-14.7
8501	16-18'	0.6'	6-6-8-11	14		_	160-16-
1635	18-20'	0.5'	15-9-7-12	16		_	16.4-16.6
1644	20-22'	0.3	5-5-8-12	13		_	18.0'- 18.5
- E~	of Boris C	ZZ'BGS , BOA	2.06 Trumie	brand to b	usen		20.0' - 20
i	0 GAILOUS BE						
						_	
* 8	1-22 1411	on IC san	as/Gwels				
w						_	
			MANAGEMENT CONTRACTOR			_ -	
						L	

1)13/08	<u> </u>	W-04 PILOT BORUS		3
INTERVI	1	Desce Arria		
	22A Store A			
6-0-75		usis to Dock Gu	y BOUN FSAN,	mace
04-06	5127 Loose, 1			A
0.0 0.12		Early From Sans, L,	i & I. I I I I I	1 1 1
	MITEIC + SA	CT, LITTLE CALLASEOUS	S DIT / SAMS SIRE GO	t/RS
10.0'-10.		securous From Sa	N / 200 / 2000	اردارا
		THATE SIT (CALCULE		1 1
12-0 - 12-2				- 10-610
12.2-129"	BROWN From	Gravel, The Look Sa	13, 744e5, 0, SATU	vao.
		Suy Ciny, maseur		
		100 can and Lo		Sarina
160-16-4	<u>' 544</u>			
16.4-16.6	DARIC GUY F. S	is, Tura Sir, Same	MATGO.	+++
18.0'-18.5		J Froctus Aus A	on bunel, three s	7.5
_	Samazos.			
20.0 - 20:	3 544			
				

11/13/08 DOK ON STE, DESCRIPTION DE CONTRUMNOS OF PLOT WEATHE 0630 BOEN'S. SARAN MEGING 0730 MATECO TAXES UP of 1400 0 April. (500 641) 0800-0900 0590 MATECO CHECKIE ANTOHAMMER ON AGO TRUME GROT MW-OZ DNOT BOE. SO, HIGHRESSILESTERM 1/00-1200 Clew Acces/rocis, masicia romes-01. 1200-1300 Marco Luza 1530 PZ-01 INSTAILLTION CONDUCTO MW-4 from Boeis CROWED. 1715 1730 MYTERO OH SITE ROK Off SITE 1630 - SCAV/ELLIK NOTES

<i>#</i>	/14	1/0	8			Ι	Τ.	Т	Т.	Ţ	Τ.	T		1	24	Y	4	æ	,	T	Т	Т	T	T	1	T	T	7	T	Q	Ð
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_	2	24			Ž	ы	1	\$	e,	16	A	رع	Z	15	/ 5	s٠	-	-	1	-											
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11/14/08	MW	05 Prot	Boeist (P	-05)	1	11/14/08 MW-05 PHOTBORIS (PE-05)
ARCASIS	Row Kitt					
MATECO	GARY Swit	T, JOHN 01	Sout -		75	INTERNAL DESCRIPTION
COM	STEVE BO	,				0-4' 22A STONE SAD
EQUAMENT		1	MANTED RIL	, 41/4" 501	15A,2"x2'	40-46 GAM BEOWN SILVY C/AY, TAKE HIBBA J DEGISOR OR BUTS ON
b					411,3"5pass	46-4-85 GRY BROWN From SUB, Tange Sivin MAGE SHEIS, MOST
						4.85-5.0° Decic Gry Stry Olay moist & Duble CASE
TIME	12764)	Acc (4)	Blows (6")		Commers	60-63 Desc buy A Sus, Tuce So, samuro
0920	0-4'	- (puriou	S USA THEOU	64 224 St	ove Ass	6.3-7-1 Ocic Brown GRADING to CIDING GRAP & SUB, Tange Six
0926	4-6	1.0' .	3-1-1-1	2	-44.40.171	TANCE SHEED, STEWARD. (LIEWY GULY CAICHEAS, Dreit)
0932	6-8	1.1"	3-1-1-1	2 \$7'	TRIED 3"	8-0-8.4 / LIGHT Guy From Say, Corrac Sio, True Iron Guel,
0940	840	0.4'	7-9-10-10	19	NO RECOVERY 2"	Time Siv, Somewood (Liber buy Cakeneous, wireing)
0949	10-12	1-1'	4-6-9-13	15	3" PHOTO 3" 8249	10.0°-11-1' SASA, MOCUSES MACE C. GUAREL.
8957	12-14	1.4'	23.15-10-8	25	3"	17.0-12.6 Gry Bland From Sus Tasce C Sacs Trace Sig, Sprante
1001	1-1-16	0.4'	7-10-10-16	20	3 "	12-6-129 Gray soon for Sun ma from Carel, Tours is Someway
/009	16-18	0.8'	5-7-8-8	15	3"	12.9-13.4 Sork ay I som and Lorre Los Sus samuros
1016	18-20	0-6	6-7-6-6	13	3"	14.0-14.41 Drek and C sus no famel, Love from Sus, Sirveyos.
1020	20-22	0.0	6-9-9-9	18	3"	16.0 16.8 Drek Gly Froc Sup, Come from Graves, Strawood
	CH YO PUC	0.010"5	or some 5	1-14 BGS		18.0-18.6 Disicary C Sans no F Gravel, Cittle from Sans Torre
- 2" 10 s			i	1		m Gravel, Saturation
	Į.	1		i .	14.0'865 (7846)	20.0-22.0' 20 Recovery, Linary SA4
- 3/8" Bus	1 .	1	1		846)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
~ 10 BW	owner much	1060-2 2	<u> </u>	- V	(230)	
	Think of England .				,	
A-11.400.00 (1)					· .	
AND THE PROPERTY OF AN ALVANDARY						
	1				1	

11/14/08	M	0-03 Pro	Bokwa		(DK)
ARCLANS	Row Kins	3			
MATECO	l .	Fr, John	052	900	
con	STEVE A	1			
EQUIDMENT	CME 55	LC TACK	uaurus Ri	6,414° IS	HSA, 2"22"
	SPLITSOOD	05,14018	ANONAME	e, 30" FAIL	, 3"5Amas
• •					
TIME	INT (4)	Rec(4)	B/000(6")		Comments
1130	0-3	- (0072000)	א בכל אלץ	THEOUGH Z	ZA STOVE
1307	3-5	0-9'	2-2-2-2	4	3"
1314	3-7	1.6'	2-2-5-2	4	3.,
1317	. 7-9	1.3'	2-4-7-9	// ₹ 8'	3"
1325	9-11	0.6'	4-7-11-12	18	3''
1,328	11-13	1.27	6-6-6-8	12	3 "
1336	13-15	1.1'.	4-5-5-7	10	3"
1341	15-17	1.0'	6-9-12-20	21	3''
1348	17-19	1.3.'	4-5-8-8	13	3 "
1353	19-21	1.2'	6-9-11-13	20	3''
1402	21-23	1.3'	10-11-14-20	25	3"
-	end of Boe	26 e 23' Be			ro\
	o Grase We				
× 9-	23' HOA	K SAUSS (pavel		
			T 1000 T		

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11/14/08	MW-03	Poor Box. J	
INERVAL		Desce, prod	
0-3 221	STORE		
3.0-3.4 224	Stare		
3.4-3.5' DARK B	أن ويجمع ويدم		
3-5-3-9' 6my Br	mo Suy CIA	4. Ture oxbriss, 40	DE & DOUBLE CASE
5-0'-5.4' Mer se	wof Sus +	use Sir Sarcus	
	1 1 1 7 7 7	S, TALL SIN, SATURA;	Ε Δ.
7.0'-8.0' Sag			
	east Sins, C	MTUST, TUNEMOC.	Sus much Lay
Grace, S			
9.0 -9.6 onwer &	ears sures	us, Lime woo Sus,	Tance fro (Genel,
SATURATED			
11.0 -11.3' Brance &	aux FSLO	GATIR MIDO SMD, TAKE	for Green Services
Tusie			
	-	no, Trace Love buce	/ Jose Strump
13.0'-14.1' SAA			
	envo from S	Sus, Cirra C Sus, 724	e for Garage
SAHLA		, b///n C, //-n	
17.0'-17.4' SAA			
	RD 1		
		Suo, Gritte From	guite, cost
	V71-62		
ا ا ا ا ا ا ا		FSUD, Thousar, S	
21.0 12.2 SAN	abolitanshu	And Froc Gravel, Little	From Saw,
21.8-22.3' (RH)	HUMALAD.	HIMO L to a May May 1 2/1/10	,

11/17/08	Λ		NOT BORIS		8
ARCHOS	Row Kins				
MATECO	,	by, Rob M	1		
EQUAMENT			wes Rib,	1	SA, Z"XZ'
	spl.rspaa	25, /40 /A	9070/4anae,	30" HI	
Time	INT (4T)	Ac(yr)	B/ows(6")	<u>N</u>	corners
0855	0-2	0.6'	2-2-2-3	4	
0859	Z-Y	1.0'	2-2-2-2	4	·
0902	4-6	0.6'	2-3-3-4	6	
0907	6-8	1.2'	6-6-11-18	17	
0911	8-10	1.21	10-20-12-9	32	
0916	10-12	1.3'	5-3-3-5	6	▼ /2′
0921	12-14	1.0'	4-5-7-12	12	
6926	14-16	1-3'	16-12->-5	19	
0932	16-18	6-7'	13-12-7-7	19	
0936	18-20	1-71	6-6-3-3	9	
0939	20-22	1.71	2-3-6-7	ģ	
0944	22-24	1	4-4-4-7	8	
0949	24-26	ام،	2-2-2-4	4)
•					1
- END O	f Boring @ 26	' 865. BORID	Trusmie GR	OUND TO GRACE.	w/m
	BOUD-117E QU				
* 11-	26 HIGH	K Sanos 6	ravel.		

	h	2/	0	В			T				T					A	N	v.	-0	,9			D.	97		Sa	٠.	26				-			[6	es	3
	7	7	77	ø	e	۵ر	1	·			1				†			-	1	4	S.	e.	<u> </u>	70	2													
	2	-	0	•	e	, 	k	B	ę,	v	u		Û	14	۵	4	æ	61	b	ĸ.	2	ì	-	7.	14	e	œ	61	, VIC	5	C	0	or.	S,	u	æ	۵)
-	1			+		7	12	ll	R	α	,	_	à	Z	7) (لمرد	S	549	d	E	, ,,	4	1 47	٥.	_		- Commence	-	-					_	-		
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	ير	21	,	-/	3	1	1			1	- 1		1		- 1		1	00		2	B	. 4	4,	<i>17</i> a	1	מסר	26	24	ue/	Z	14	S	i	2	47	Tes.	T)	7
· -	١.	•	t				L	~	+	1	+		5	+	-		-	-	1	-	1	_		+-	1		1	 -	1	+	1	-	Ť.,	T -	+		cz	ГΙ
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3/2/09: 3/17/09 MW-13 (A) ARCADIS ROW KUHN GARYSW. A JACK SMORES con: STEVE BOOM EQUIPMENT: CASE STLC TARCK MOUNTED RIG 121/4" FD 1954, 41/4" ID HEAD, 12/4"ID HEAD PLA, CAT 2678 SKID STEER -10"57801 CASIX GROWED 0-6' BGS W/~35 GANOUS TYPEI portuno/5% Barowin Glar. 3/17/09 MW-13 WELL CONSTRUCTION DETAILS - 2" ID SCH. 40 TYPE 30455 VELWIRD WASP 0.010" SCALED 7.0- 12.0" BLS - 2" ID SH. 40 TYPE 304 SS RISER 3.0' ALS-7.0' BLS - GMSE #1 K: E SICIO SANS, PACK 6.5' 12.0' 865 (3.25 8465) - 10" SEE1 CASING GROVED 0-6.0' B6\$ - 3/8" Berrowing (Hip Seal 4.5'-6.5" BGS - TYPE I PARTIMO/5% BENTONIE GRANT 0-4.5' BGS - SIET PROTECTIVE CASING 3.2' 465 1.8'865

Dainy LOG CONT. Pot Discusses 10 CASIX INSTALLATION DEATH C MW-13 af DOX CONIS STICK of DRIGAT 6' CAS AS DESTA AS GRIGARY ALONSES 1500-1530 MATECO MAGH SHEEMS STOM CHES 12/4"MS4/1000 26, MOSA1 20 10 MAN-13 LOCATION. 1630 MW-13 10" SEE) CASIG INSTRUMENT CONSIDER 1630 Steve Boom (maco oversite) off Sie 1630-1730 MATECO MIGH DRESSING STOR CHANS ACKES/ TOOLIZE, WASHING EQUISMENT, SIE CHANED OASE

3/3/09 Sury . - 5% unsunis 10 30% WEATHE DIK 00 STO , Payone fee pose is 10 " STOCK CAS - 16 0630 INSTAILATIONS. 0715 MATECO / STEVE BOOM ON SITE , MATECO SPACIOS/ When it Four pares TANIBATE SAKA METISG 0730 0800 MATECO MOBES SETS UP @ MW-10 0850 MW-10 CASIS DELIAS - SO- CY AS, MATORO MAND SING to GET HEO CCX SOW. 0938 MATECO BACK FROM GETTING HED MW-10 10" CAS: 16 INSTAILATED COMPLET. 1015 DECON 12/4" ANCRES/ TOOL US, MOBILIE TO MW-11 1015 - 1050 1200 MW-11 10 CASIS INSTAILATIN COMPLETE 1200-1300 MATECO CUTH 1300 MATECO SUPPORT TRUCK ON SITE U/ SUPPLIES (GULL) MIX, SOUS, forms, 5'55 James V Was suns. ./330 MATECO MOSILITES TO MW-14 MW-14 10 CAS: & TUSTAHATION COMPLETE 1445 1445 - 1730 STEAM CHEN ANGERS/ TOOL NO, LOSO US: MOBLINE TO NORTH Sing of KAlamazon River off Sire 1730

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3/3/09: 3/17/09 ROW KUH ARCADIS GAR/ SWIFT, JACK SUSSES MARCO: STEVE BOOM Com: EQUIPMENT: CME 55 LC TANCK MANNERS Rib, 1214 "ES MOR on/ AMB, 4/4" ID MOA, CAY 267B Skin STEER. - 10" STE 1 CASING GROWED 0-4" w/ - 35 GALLOWS TYPE I PORTLAND/ 5/0 Burowite GROW 3/17/09 MW-11 WEIL CONSTRUCTION DETHIS - 2" ED SCH. 40 TYPE 304 SS VER WIRE WARP 0.010" SCREW 5.0-10.0" NS - 2" ID SCH. 40 TYPE 304 SS RISER 3.0' ALS -5:0' BLS - 6MAR # 1 K: & Swin SMADOR 4.5'- 10.0' BLS (2 BAGS) - 10" STEEL CASING GROWED 0-4" BGS - 3/8" BENTOLITE CHIP SEAJ 2.5-4.5" BGS TYAE I ARTUMO/5% BENTONIE GROW 0-2.5' BGS - STEET PROTECTION CASING 3.2 MGS - 1.8 BGS

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3/4/09 DANY LOB overcas to face / Sing, 20% warnes to 40's WEATHER BIC @ FRANCE PLANCE! INSPORMED NEW (NORTH) 0700 for Communios of Mouracis well cas ist INSTALLATIONS. PROPER PAPER WORK. 0815 MATECO Sex up ou PZ-05 for ABAGOVINED. 0830 ES S. : ERM ONSIT TO LOOKE PAO LOURIST TERM WILL CAIL TO COURS. PAD CONTROND, MARCO GUTUB Supplies (CASINA, 18/4" DES HISA, PORTLAND OTT. FROM SOUTH SIDE STAGING ARIA. 0935 MATERO BACK FROM GETTING SUPPLIES PZ-05 ABANDONARY Canpres 1000 MW-5 10" CASSE TUSTAHATTON COMPLETE. 1115 1115 - 1315 MOBE TO MW-4, HIBU PRESSUR STEAM CULTURALES! pooling, mareco buch, TANK you HED MW-4 10" CAS. 36 INSTANTATION COMPLETE 145 1415-HIGH PRESSURS STEAM CHEN ASCUS/ TOOL :36, MOBILITE TO MO-9 1800 MW-9 10" CASIS INSTALLAND COMPUTE 1800-1830 HIGH Presente STEAN CHAN AUGUES / TOOLISE, WINTOR TO Rib/EOUPMENT. 1830 off Sire

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MATECO: 6	say suit, I	FACE SANCES	
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PILE	4/4" = 5 148A	CAT 26 & SKIS STEER	
		0-5'B65 w/2406W	IOUS TYPET
TOSTON	0/5% Bev row.	TE GEOLT.	
3/11/09 MW	1.454. 0		
311101 1010	7-03 WOI (60)	STRUCTURE METAILS	
7 70 504.	40 TVAT 30455	NEE WHEE WAS 0.010 SOMEN 6	·5-115'8a
		Piser 3.0'A65-6.5'B65	
		DACIC 6.0-11.5/365 (3 Baus)
- 10" STEET	CAS 16 0- 5.0'	BGS	
- 3/8" Beuro	WITE CHIP SEAL	4.0'- 6.0' A6S	
- TYPE I A	bercas/5% Be	vrav. # 680- 0-4.0' B6S	
- STEEL PRO	vectus casub -	3.2' 465 - 1.8 365	

3/4/09 P2-05 ABANDAMAN ARCADIS RON KUAN GSA/ Swift, JAUC Suspers Sieve Boom COLDANT: CME 55 LC TACK MOUTOS RIO, 414"IS WEA PZ-05 COUSTRICTED SYDTH: 14 DES I 10'(n) 7'865 - OUGRABOND PT.05 -/ 4/4" 20 HS4 TO 15'865, PULLED WALL Mrg. 215 (10' 0.010" SOU YO Z' PLE SOUW : PUC RER) - Trumie GROUTED BOREHOU W/ ~ 40 GAHOUS TYPE & PORTURA/ 5/0 Amonine GROUT

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3/4/09 : 3/11/09 ROW KUHW Grey Swift JACK Supres Com STEVE BOOM CME 55 LC TMEK MOWNED RIB, 121/4" TO HEA W CLUTCH AVE, Y'Y" IN HISA, CAT 247B SKIN STEER - 10 Story casis 680, res 0.8 465-9.2 865 m/~ 65 641025 Type I berens / 5% Berrang bear. Differ service on 7' DUT TO CORSITE ZONT. ARIJUS TO 7' BGS, SROVE CASISE TO 9.2' Bbs uf Rie Arossurac (Resuris in 0.8' snewp) 3/11/09 MW-09 WELL CONSTRUTION DETAILS - 2"ID SON. 40 55 0.010" VEE WAYD TYPE 304 SCREW 11.5-16.5'865 - 2"TD SCH. 40 SS RISER 3.0' A65- 11.5' A65 - GMAPE H | K: E SILVER SANDARCE 11.0'-16.5' B65 (2.5 BMG) - 10" STEEL CASNO 0-9.2 BGS - 3/8" BENTODITE CHIA SEA! B.O- 11-0' BES (3/4 BAG) - TYPE I PORTISMO /5% BENTOWING GROUT 0-8.0' BGS - SRE) PROPECTIVE CASI-26 ~ 3.2'A65-1.8' BGS

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Ja * * * * *	12/4" EA	4SA			
TIME	INT (fr)	Accer)	B10005 (6")	<u>_N_</u>	COMMENTS
103B	0-Z	1.6	3-3-2-4	5	
1044	2-4	1.6	3-9-5-3	14	
1051	Y-6	2-0'	2-3-3-10	6	₹ 4.3'
1101	6-8	1.0	4->-8-19	15	
1168	8-10	1.0'	4-11-16-16	27	
1118	10-12	0.4'	15-15-12-7	27	
·	Mw-01	CASNIG IN	5741147107		
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200 2-101

PZ-01 ABANDOOMET 3/5/09 ARCASIS RON KUHO GAB/Swift, JACK-SANGES MARECO: can: STEVE BOOM EQUIPMENT: CAME ST LO TRACK MOUNTED DIS, 4/4" IN HIS PZ-01 CONSTRUCTOD DEPTH: 13' AGS I 9.2' (Mc) 6' BG - OUTRORINO PZ-01 W/ 4/4 D HEA TO 13 BGS. WELL MATERIALS DISTROJED DRIJE OVEDRIJAIS TAMANTE GROUND BORINGE OF ~ 45 COSTIONS TYPE I PORTUNO 15% BENTOWNE GROWT.

3/5/09	- 3/12/09	MW-6	Pro Box.	¥	@
ARCASIS	Row Kush				
MIRCO	GARY SWU	ir, Jacks	4resces		
can:	STEVE B	m			
EQu,pmer	T CMESS	- LC TMCK	MONTHS RIE	, 4"/v" IN	454, 3 x2
<u> </u>	Spargoons	, IYDIS AUT	омаяс Нам	mer , 35" fa	17, 121/1
	HSA.				
Time .	1NT (br)	Dec(h)	B/ans(6")	N	Comars
1500-1509	0-3	- CONTINUE	rus 44" HSA	THROUGH Z	1 A4 Stown PM
1509	3-5	1.3'	19-14-4-4	18	
1516	5-7	1.2'	2-2-2-1	3	
1535	7-9	1.3'	2-2-2-3	7	▼ 7.8°
1540	9-11	1.2'	4-8-11-15		
1548	11-13	1.0'	20-14-7-6	2)	
3/12/09	mw-6	CAGNIG INS	raliamos ; we	II COUSTRUCT	DO DETAILS
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	VITE CHIP SEA				
	DETUNA / 5º/0	,	1	.4'B6S	
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1509	3-5	1.3'	19-14-4-4	18	
1516	5-7	1.2'	2-2-2-1	3	
1535	>-9	1.3	2-2-2-3	7	₹ 7.8'
1540	9-11	1.2'	4-8-11-15	19	
1548	11-13	1.0	20-14-7-6	2)	
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3/4/09 Dring Los 5) of AM, OVUCAST Wenne DIK ON SITE, AREPARE FOR CONTINUOUS of PICOT 0700 Boliss/ Cosia tromunicos MITTO ON Sir , Company Procentales, Alapane Lak 0730 MW-6 CASING INSTALLATION. 0915 MW-6 10 CASIB TISTIGHTON COMPRESE 0915 - 0955 HIGH FRESE STEAN CILL MELES/ TOOL 16, MARILIE TO MED-Z MW-2 Pro Bolis Carputt, TRumin GROSTED 1145 All old Size 1215 1930 PLAIR ABEINES IN SYMPLE

3/9/09	Dainy Lob	(A)
wearne over	CAS- 321/ Am	
0700 BOK M	ws p w/ C45:16 5,500,000 on 50,000 52	ie, Bento
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0730 MATECO	Cresary on Sit Be is casis signice	BICKON
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1730 OFF S.	, WINTERITE RIG , SITE CLEANUID	
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3/6/09:3	112/09	MW-Z A	wor Bolino		
ARUSIS	RONKIN				
MIECO:	6AR/SWV	r, Jacks	mesers		
CSM:	STEVE BOX	243			
EQUIPMENT:	Comess	LC TACK N	round Rib,	12/4"50	154, 4/4"
	IN HSA	, 3"×2' 5Δ	Urspans, 18	OIB ANDM	ATIC HANNER,
	30" fail				
Ime	wrlly)	Acc (fr)	Blows (6"	1 1/	COMMENTS
1000-1006	0-4' -	(ourrows)	SA THROUGH	ZIM STOWE	عمد
1007	4-6	1.6	2-2-2-4	4	
1014	6-8	1.2'	2-1-1-3	2	
1018	8-10	1-1'	2-4-6-6	10	₹ 7.5'
1026	10-12	1.1'	5-4-5-10	9	
	MW-Z	(45.16 In	STAILADVI		
- 10"Sm	El Casino 6	sames 0-6	* A65 W/	~ 40 GAIIR	25 TYPET
		ion in blan	•		
1 1 .		CONSTRUCTION	1		
- 2" IA SCH .40	TYPE 304 SS V	EE WIRE WA	P 6.010"SCA	W 7.0-12.0	BUS
- Z" IA Sen. 40	TYPE 304.55	RISER 3.0' AL	5-7.0'86S		
- 6/400 # K	•			(3BAGS)	
~ 10" STEEL C	1	1.			
	CHIP SEAT Y				
	!	HOUSE GROUT	0 ~ 4.5' B(5		3
		3.2' A65-1.8			

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MW-> PHOT BORIS 3/9/09 3/12/09 ARCADIS Row KNAW GARY Swift, JACK Souches MARCO CAM: SEVE BOOM COME ST LC TRACK MONTHS RIG, 41/4" TO ASSA, 12/4" TO ASSA, 3"x2" Sperospoors, 140 & grownic Hannes, 30" lass inretry Acc (br) Bland (6") N TIME (Derney) 0-4" - CONTINUOUS HEATTHROUGH ZI MA STONE PAS 1050 - 1055 4-6' 1055 1.2' 3-3-3.4 6-8' E 6.5' 1.6' 1102 2-2-2-7 8-10 1.3' /107 8-5-5-5 10-12 1-0' ,1113 7-8-10-26 18 - 10" STEEL CASING GROWED O-G.Z' BES W/ ~ 45 GALLOUS TYPE # Por cup/5% Burowie Georg 3/12/09 MW-7 WELL CONSTRUCTION DETAILS - 2"ID SCH. 40 TYPE 304 55 WE WIRE WARD 0.010" SCHED 6.7'- 11.7' BUS - 2" ID SCH. 40 TYPE 30Y SS RISER 3.0" ALS-6.7" BLS - 6/AAF# / K; E Shich SANDPACK G.Z'- 11.7'BGS (38465) - 10" STEEL (45:36 0-6.2 865 - 3/8" BENTONITE CHIP SEA! 4.2-6.2' BGS - TYPE I PORTLAND / 5% BENTONIE GROVY 0-4.2' B65 - STEEL PROTECTIVE CASIJG 3.2' AGS - 1.8' BGS

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MW-> PHOT BORIS 3/9/09 3/12/09 ARCADIS Row Kuyw GAR/ Swift, JACK Soucces MARCO CAM: SEVE BOOM COME ST LC TRACK MONTED RIG, 41/4" TO ASSA, 12/4" TO ASSA, CONDMENT 3"x2' Speirspoons, 140 18 grownic Hannes, 30" fail Acc (br) inretr) Blanks N TIME (Dements) 0-4' - CONTINUONS HEAT THEOSEN 21 MA STONE PAS 1050 - 1055 4-6' 1055 1.2' 3-3-3.4 6-8' E 6.5' 1.6' 1102 2-2-2-7 8-10 1.3' //07 8-5-5-5 10-12 1.0' 7-8-10-26 18 ,1113 - 10" STEEL CASING GROWED O-G.Z' BES W/ ~ 45 GALLOUS TYPE # Por cup/5% Burowie Georg 3/12/09 MW-> WELL CONSTRUCTION DETAILS - 2"ID SCH 40 TYPE 304 SS WE WIRE WIMP 0.010" SCREED 6.7'-11 7' BGS - 2" ID SCH. 40 TYPE 30Y SS RISER 3.0" ALS-6.7" BLS - 6/AAF# / K; E Shive SANDPACK G.Z'- 11.7'BGS (3BAGS) - 10" STEEL CASING 0-6.2" BGS - 3/8" BWYWITE CHIP SEA! 4.2-6.2' BGS - TYPE I PORTLAND / 5% BENTONIE GROUT 0-4.2' B65 - STEEL PROTECTIVE CASIJG 3.2' AGS - 1.8' BGS

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3/9/09	3/12/09	Mw-3	PILOT BOR	.>6	6
ARCADIS	ROOK	m			
MATECO	GARY SW	Ar, Jack S	Phases		
CAM:	STEVE B	oom			
EQUIPMENT	CME 55	LC TMCKA	nawres Rib	, 12/4" TO H	51, 4/4"
<i>y</i> . *, . , .	IA HS	, 3 'x2's	corssons,	140 1B AUTO	manic
	HAMME	30" fAII			
TIME	INT (fr)	Aec (br)	Blows(6")		Comers
1445	0-2' -	CONTINUOUS	Y'/Y ED HSA	THAOUGH ZIA	sour pas
1456	2-4'	1.8	3-2-2-2	Y	
1453	4-6'	0.8'	2-2-2-5	4	
1501	6-8'	1-4'	1-1-4-8	5	V 65'
1506	8-10'	0.8'	8-17-12-21	29	
1514	10-12	0-71	12-37-28-39	65	
,	- 10" Stee	1 CASNO GR	0- 4.4	B65 w/~	30 64/1005
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3/12/07	,	II CONSTRUCTIO			
- Z"JO SCN.40				w 6.0-11.0 B	&S
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- 10" STEEL CA	_	1	:		
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		.z' A65-1.8'A			

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3/10/09		MW-8 P.	or Boeit		(Par)
ARCADIS	Row KUHN				
MATECO:	GARY Swit	JACK SWA	<i>n</i> s	7	
con:	STEVE BOOM		4		
EQUADMENT:	CME ST	LC TMCK M	weskis,	12/4"50 14	sa, 4%"
(A) 14	IO HSA, 3	"x2' sping	0005, 140 1A	AUTOMATIC !	gane.
	30" kan				
Time	INT (Fr)	Acc (hr)	B/0~5(6")	A/	
0925	0-2'			THROUGH 21	(aments
0927	2-4'	1.7	4-4-5-6	9	
0931	4-6'	0.8	2-2-2-2	4	
0938	6-8'	0.5'	2.2.2.2	9	Z. 5.8'
0943	B-10'	0.7'	2-2-2.7	y tives,	compression of
0953	10-12'	1.2'	3-7-9-22	16 6 9.3	
1012	12-14'	0.4'	8-49-50/02	Ref	
/020	14-16'	0-8'	5-7-9-10	16	
	A 1)			PAN ANAS,
1103	8-16	0.2'	WHY- 2-3-3	5 Res	o Courner.
· ^ lh'	STUCT CASING	68a.an ~ 0.0	' AGC = 1A_2'	BCC . J 70	(41142)\$
	I PORTUS /			1	
•	DIANNED DUE T				AUWUS
1.7		UF.			
* Se	e 3/12/08.	for mw-8	CONSTRUCTI	od petans	
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3/10/09 MW-8 P.LOT BORS 21 AA STOUG DED Green Seaves 5, W C/A) Trace albavies (20005) 13 secures SOAT MOUS Tages Tures in organ & San Consumos # Possisio sus Courac e 3 2' 4.0-4.8' DARK GMAJ DIACK STONY C/AJ TURG ORGANICS (ROWS, CRE) Massissay Soft, Messer. 60.6.5 64 Bean Sing Cay, rance in 100 Sus, parce 01600 , SOFT, MINSY 8.0-8.5 Dock Gry Brown Suy Cry, Tance too Sans, Solo, is as 8.5.8.7' buy slow & SAD (2)70 Sit 12057 10.0'- 10.3 Sa Truce Debutes (nome series) unex any sens for suo a a Carrel and Stir Chi careous sessos no on Ginel, useun Derse SATUROS 120-12.4 Gray Cossic, Some Line San and Loc Genel, Ingering 140'-148 Guy Beaund & Guart, Living moc Grand / from Sus truce Sis & movemy serse, structos 8.0-10.0 SNIFF B-9-8, Come I saw, make so 9.8-10.0 Box. 10 Transa Granto a) + 30 Games Benow RE GROUT

Scores 10.8-15.8,

3/10/09 DAIN LOG 39 FAM. PAIN WEATHER DK, MATECO ON SITE, PROPUR LOR CONTINUED 0730 of MW INSTALLATIONS. THE GATE STREY MEETING Bin Delay 0730-0925 Trumie Grow 15 MW-8 PINO BORING 1030 -POSIC CONTINUES MN-B 10" CASING INSTAURATION & 9.8' 1115 Bles u/ Desto cavis. mang concerne (some som) 1125 S6-5 704.2 MW-8 10 CASIG INSTANATION COMPLETE 1330 1330-1400 HIGH MESSUR STAM CRW AVERS/ TOOLING 1400-1500 MATECO LUNCH 1500 -1540 STEAM CRAW Rib: All TORNE PRIOR TO MONTERISE WELL INSTA1147725 1540-1630 MOSE RIB TO MW-9 LOCATED off Site (Herry Sais) 1630

3/11/09 De an Site Propre for monoció weil Enstallen SECK Bran / MISTECO ON SITE, MITECO WASHING & DISMAT. MW-09 INSTALLATON COMPLETE 1100-1130 HOLY AUSSIN STEAM CHEW ANGERS/ TOOK, is, MARKIZE TO MW-5 56-5 MISSING/ DESTROYED 1230 MW-05 CONSTRUCTION COMPTER UP TO Seriou to Seal 1230-1330 MATERO LUNCH MUO-05 INSTAILATION COMPLETE 1400-1515 Now Aresone steam Clean Archael took to mobilize to may-4 1645 MW-04 INSTALLATION COMPLETE 1645-1700 HILLA MESSINE STEAM CKIN ADGRES TOOLING, MOBILIZE TO MILD-MW-01 INSTANTING COMPLETE UP TO BENDERIE SEA! 1815 MW-01 INSTALLATION COMPLETE off SIE

3/10/09 DAIN, LOG (A) 39 FAM. PAIN WEATHER DOK, MATECO ON SITE, PREPARE LOR CONTINUATION 0730 of MW. INSTALLATIONS. THE GATE SARRY MEETING lin Dely 0230-0925 Truming GOOT 15 MW-8 PINO BORING 1030 -MIK CONTINUES MIN-B 10" CASING INSTAILABOUR & 9.8' 1115 Bles u/ Dest cavis. many concurren (some som) 1125 S6-5 704.Z MW-8 10 CASIG INSTANTATION COMPLETE 1330 1330-1406 HIGH MESSURE STEAM CLEW ANGRS/ TOOLISE 1400-1500 MATECO LUNCH 1500 -1540 STEAM CRAW Rib: All TORNE PRIOR TO MONTERING WELL INSTALLATINES 1540-1630 MOSE RIB TO MW-9 LOCATED off Site (Herry Sais) 1630

3/11/09 Bux on Site Propre for monorain well trosposions STOK BOOM / MISTERO ON SITE, MISTERO WASHING & ON DROS. MW-09 INSTALLATOR COMPLETE 1100-1130 HAGH MUSSINE STEAM CHAN AUGUS/ TOOG. is, MADAKLIZE TO MIN-5 56-5 MISSING/ DESTROYED 1230 MW-05 CONSTRUCTION COMPLETE UP TO SECTION TO SEA 1230-1330 MATECO LUNCH MIO-05 INSTALLATION COMPLETE 1400-1515 HIGH AMESSINE 3 TESM CHEM? AVGRES / TOOL TO, AND BILLIZE TO MAD-4 MW-DY INSTALLATION COMPLETE 1645-1700 1416A MESSINE STEAM CKIN A7648/7006.126, MOBILIZE TO MUS-MW-01 INSTANTION Complete up TO Berrowsie Seal 1815 MW-01 INSTALLATION COMPRETE off SIE

3/12/09			1 206		(EX)	3	/13/g	1				D	Airy L	.06	, ,		·	······			Ø
WEATHER	19"F. LIBH	John A	<u>'</u>				WEAT	HER	A	ety C	nas/	15	FAR	w	421.	26 R	Lon	2 40	15		
0700	AX & STE			VADOT OF	MONITORNE		07.3	0	BK/		1 1	1 1	1 1	1		1 1	1	1 1		EQ.	بري.
	WY TOUST								> 5.												_
0230	MATECO/S	TEVE Down	ON SITE.	MATECO WAS	14146																
	FQV. DMB																				
1115	MW-6 IN	SY41141102 Com	Alex																		
1230~1330	MARCO LUN	ÇU																			
1345	MW-2 In	STAILATION CI	mple																		
1520	MW-7 IV																				
		1 State (270-2) d																			
-2"x0504.4	0 TYPE 304SS			CRED 10-8-	15.8'865																
	02 YOE 304 CS																			8*	,
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3/16/09 DAILY LOS (D) WEATHE SURY 4164 405, LOW 50'S 0500-1100 Travel FROM SYR MY TO PLANNER, ME RIC ON SIE ASUSAN FOR CONTINION MATECO TANK. 16 UP W/ HED, HIEN DRESSURE STEAM CREWING AVERS/ TOO WIS 0900 0930 Hick Se Sue Stram CHAD Muses/ rox. 36, MATECO LUNCH 1215-1315 MW-16 WELL CONDIENCION COMPLETE 1415 X MW-12 10 CASING INSTALLARIN COMPLETE 1030-1100 Hear pressure stern com preces/ 1000006. HILD PRESUR STERM CLOUD ANGES/ TOOK is, MOBILING TO 1415 MW-13 well Corson con Canales 1200-1300 MARECO LWCH 1600 LMW-14 INSTALLATION COLDINE 1500 MW-15 WELL CONSTRUCTION CONSIGNE 1600 -MATECO CONDETES MW Syllace Constations or uperty 1500-1530 HIBH MESSINE STEAM CHEW ADGERS/TOOL Side (AD) GAME! CONCRETE MIX TO STEEL PROTECTE CO. 365 MAGI FASTON MIN-12 ON 3/18/09 TO VET CAS. 16 SET 24 48-46 WHERE GROT HAS SETTIND 1530 - 1700 Sint Change, marco Longia Spoking OLLSINE

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	of mw.	TUSTA I IATRIC	8.			mw-1	6.06	~ 3.06'	6
0930	1	INST4114700	1			MW-Z	9.20'	~ 6-26'	5
2930	4	soon off Sie	1			mw-3	8.23'	~ 5 .23'	5
29 3 0 -	1	Steam Clenzs	1	10: 5-0		mw-7	9.64'	~ 6.64'	
		John Cappy) two proces	K40 1227E: ()	eup	Mw+5	9.59	~ 6.59'	
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						mw-7	9-70'	~ 6.20'	
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							6.50	~ 3.56')
	Λο					MW-11	8.06	~ 5.06	3
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7,	- / ^	/ / .	_	,		mw-13	5.75	~ 7.75	6.
4	mpry DRV	ns (for o	weil Develop.	Mer/SAAR	×4)	MW-14		~ 3.>0'	
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Attachment 2

Groundwater Monitoring Well Construction Logs

Date Start/Finish: 3/5/09 and 3/10/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" and 12.25" ID

Rig Type: CME-55 Sampling Method: 3" x 2' Split Spoon

Northing: 350961.4 Easting: 12772432.6 Casing Elevation: 708.9

Borehole Depth: 12' bgs Surface Elevation: 706.1 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-01

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

рертн	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description		Well/Boring Construction
											Locking J-Plug Steel Protective Casing
	_				3			⊒::±	Park gray-brown Silty CLAY, trace Organics (Roots), moist.		Type I Portland/ 5% Bentonite
	705 -	1	0-2	1.6	2	5	NA				grout 0 to 2.5' bgs 10" Steel casing
-	-	2	2-4	1.6	3 9 5 3	14	NA	••• E	ark gray-black Silty CLAY, soft, slight odor, moist.	to medium	0 to 4.5' bgs 2" ID Type 304 Stainless Steel riser 3' ags to 5' bgs
- 5	-	3	4-6	2.0	2 3 3 10	6	NA		Park gray-brown Silty fine SAND, moderately loose, moist to wet. Dark gray-black Silty CLAY, moderately soft, moist. Dilive-brown Silty fine SAND, trace Clay, moderately dense, moist.		Bentonite seal 2.5 to 4.5' bgs
	700 =	4	6-8	1.0	4 7 8 19	15	NA		Dlive-brown fine SAND, trace Silt, trace medium to coarse Sand, wet. ight gray-brown fine SAND, trace Silt, loose, saturated. live-brown fine SAND, little fine to coarse Gravel, trace medium to coard, trace Silt, moderately loose, saturated.	/ /	Grade #1 K&E silica sand pack 4.5 to 10' bgs
10	-	5	8-10	1.0	4 11 16 16	27	NA		sray-brown fine to coarse SAND and fine to coarse GRAVEL, trace Si aturated.	Silt, dense,	2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen 5 to 10' bgs
	695 -	6	10-12	0.4	15 15 12 7	27	NA				
	=										
-	_										
- 15	-										
								Re	emarks: ags = above ground surface; bgs = below	w ground s	urface; NA = Not
					DI		ties		Applicable/Available; AMSL = Above Mea Horizontal Datum: NAD 83, Michigan Sou Vertical Datum: NGVD 1929		vel.

Date Start/Finish: 3/6/09 and 3/12/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" and 12.25" ID

Rig Type: CME-55

Sampling Method: 3" x 2' Split Spoon

Northing: 350711.6 Easting: 12772517.2 Casing Elevation: 712.3

Borehole Depth: 12' bgs Surface Elevation: 709.3 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-02

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description		Well/B Constr	=
7.	-											Locking J-Plug Steel Protective Casing
-	-	NA	NA	NA	NA	NA	NA		o sampling - continuous Hollow Stem Auger through 21AA stone	e pad.		Type I Portland/ 5% Bentonite grout 0 to 4.5' bgs 10" Steel casing 0 to 6' bgs
- -5	05 -	1	4-6	1.6	2 2 2 4	4	NA		ark gray-black TOPSOIL. ray-brown Silty CLAY, moderately soft, trace Organics (Roots),	moist to wet.		2" ID Type 304 Stainless Steel riser 3' ags to 7' bgs
_	-	2	6-8	1.2	2 1 1 3	2	NA		iive-brown fine SAND, trace Silt, loose, wet to saturated. ght gray-brown grading to brown fine SAND, trace Silt, trace she	ells, saturated.		Bentonite seal 4.5 to 6.5' bgs
	00 -	3	8-10	1.1	2 4 6 6	10	NA		ght gray-brown fine SAND, trace Silt, trace shells, saturated. ght gray-brown fine SAND, grading with some to little fine to coace Silt, trace shells, saturated.	arse Gravel,		2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen 7 to 12' bgs
-10		4	10-12	1.1	5 4 5 10	9	NA		own fine to coarse SAND and fine to coarse GRAVEL, trace Sil llcareous deposition on Gravel, moderately loose, saturated.	it, trace		Grade #1 K&E silica sand pack 6.5 to 12' bgs
- - - 15	- 95 -											
	Colores		AF	RCA	\DI	S	tios	Re	marks: ags = above ground surface; bgs = be Applicable/Available; AMSL = Above Horizontal Datum: NAD 83, Michigan Vertical Datum: NGVD 1929	Mean Sea Le	surface; NA = Not evel.	

Infrastructure, environment, facilities

Date Start/Finish: 3/9/09 and 3/12/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" and 12.25" ID

Rig Type: CME-55 Sampling Method: 3" x 2' Split Spoon

Northing: 350339.2 Easting: 12772701.6 Casing Elevation: 711.7

Borehole Depth: 12' bgs Surface Elevation: 708.8 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-03

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description		Well/Bo Construc	-
	710 —											Locking J-Plug Steel Protective Casing
-	-	NA	NA	NA	NA	NA	NA		o sampling - continuous Hollow Stem Auger through 21AA ston			Type I Portland/ 5% Bentonite grout 0 to 3' bgs
	705 -	1	2-4	1.8	3 2 2 2	4	NA	n G	rray-brown interbedded Silty CLAY and fine SAND, trace shells, loist. rray-brown Silty CLAY, trace fine Sand laminations throughout, rray-black, moderately soft, moist.			10" Steel casing 0 to 4.4' bgs 2" ID Type 304 Stainless Steel riser 3' ags to 6' bgs
- 5	-	2	4-6	0.8	2 2 2 2	4	NA		ark gray-black Silty CLAY, moderately soft, slight odor, moist. ark gray-black Silty fine SAND, trace Organics (Roots), moist to	o wet.		Bentonite seal 3 to 5.5' bgs
	-	3	6-8	1.4	1 1 4 8	5	NA	L fi	aturated 6.0' - 6.8' bgs. ight gray-brown Silty fine SAND grading with little fine to coarse ne to coarse Gravel at 7.1' bgs, calcareous deposition prevalent aturated.			
_ 10	700 -	4	8-10	0.8	8 17 12 21	29	NA	tı	ight gray-brown calcareous fine to coarse SAND and fine to coa ace Silt, calcareous deposition prevalent on Gravel, moderately aturated.	arse GRAVEL, / dense,		Grade #1 K&E silica sand pack 5.5 to 11' bgs
-	_	5	10-12	0.7	12 37 28 39	65	NA)				Stainless Steel 0.010" VEE wire wrapped screen 6 to 11' bgs
-	- 695 -											
— 15 _	-											
					DI		ties	Re	emarks: ags = above ground surface; bgs = b Applicable/Available; AMSL = Above Horizontal Datum: NAD 83, Michigan Vertical Datum: NGVD 1929	Mean Sea Le	surface; NA = Not evel.	

Date Start/Finish: 11/13/2008, 3/4/09 and 3/11/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID

Rig Type: CME-55

Sampling Method: 2" x 2' Split Spoon

Northing: 350154.4 **Easting:** 12773098.2 **Casing Elevation:** 713.5

Borehole Depth: 22' bgs Surface Elevation: 710.7 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-04

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction	
-	-									Locking J-F Steel Prote Casing	-
7.	10 -	NA	NA	NA	NA	NA	NA	No No	sampling - continuous Hollow Stem Auger through 21AA ston	Type I Port 5% Benton grout 0 to 4	iite 1' bgs asing
-	- - -	NA	NA	NA	NA	NA	NA			2" ID Type Stainless Sriser 3' ags 6.5' bgs	304 Steel
5	- 05 -	NA	NA	NA	NA	NA	NA			Bentonite s to 6' bgs	seal 4
	-	1	6-8	1.5	WOH WOH 1	1	NA	Dar	k gray grading to dark gray-brown fine SAND, trace Silt, loose	se, wet.	
	-	2	8-10	0.6	2 2 3 3	5	NA		nt gray-brown fine to medium SAND, little coarse Sand, little fivel, trace Silt, little calcareous Silt/Sand-sized grains, saturate	fine to medium	pack
- 10 - 7	00 -	3	10-12	0.5	1 1 1 13	2	NA	Ligh	nt gray calcareous fine to medium SAND, little fine to medium see Sand, trace Silt (calcareous), saturated.	m Gravel, trace 2" ID Type Stainless S 0.010" VEE wrapped st 6.5 to 11.5"	Steel E wire creen
_	-	4	12-14	0.9	4 4 4 6	8	NA		wn fine to medium GRAVEL, trace fine to coarse Sand, trace	e Silt, saturated.	
- 15	95 —	5	14-16	0.7	4 4 10 6	14	NA	Ora	nge-brown Silty CLAY, moderately stiff, moist. nge-brown fine to coarse SAND and fine to medium GRAVEL rated.	EL, trace Silt,	
					DI		ties	Ren		below ground surface; NA = Not e Mean Sea Level; WOH = Weight of Hammer. ring drilled on 11/13/08. Well installed 3/4/09 an	nd

Vertical Datum: NGVD 1929

Horizontal Datum: NAD 83, Michigan South Zone

Client: Kalamazoo River Study Group

Site Location: Plainwell, Michigan Well/Boring ID: MW-04

Borehole Depth: 22' bgs

DEРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-	_	6	16-18	0.6	6 6 8 11	14	NA	<u> </u>	Orange-brown fine to coarse SAND and fine to medium GRAVEL, trace Silt, saturated. Dark gray fine SAND, trace Silt, saturated.	
-	-	7	18-20	0.5	15 9 7	16	NA		Orange-brown fine to coarse SAND and fine to medium GRAVEL, trace Silt, saturated.	
<u>-</u> 20	690 —	8	20-22	0.3	5 5 8 12	13	NA			
— 25 -	- 685 -									
-	-									
- 30	-									
-	680 -									
-	- -									
- 35	675 -									



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer.

Lithologic descriptions from pilot boring drilled on 11/13/08. Well installed 3/4/09 and 3/11/09.

Horizontal Datum: NAD 83, Michigan South Zone

Vertical Datum: NGVD 1929

Date Start/Finish: 11/14/2008, 3/4/09 and 3/11/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders Drilling Method: Hollow Stem Auger Auger Size: 4.25" ID

Rig Type: CME-55

Sampling Method: 3" x 2' Split Spoon

Northing: 350154.3 Easting: 12773466.7 Casing Elevation: 713.7

Borehole Depth: 22' bgs Surface Elevation: 710.7 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-05

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH EI EVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction		
-	-								Ste	cking J-Plug el Protective sing	
710	- N	A NA	NA	NA	NA	NA	2	sample - continuous auger through 21AA stone pad.	5% gro 2" 1 Sta rise 6.5"	De I Portland/ Bentonite ut 0 to 4' bgs D Type 304 inless Steel er 3' ags to 'bgs	
- 5 	1	4-6	1.0	3 1 1	2	NA	G	ay-brown Silty CLAY, trace highly degraded Organics, damp. ay-brown fine to medium SAND, trace Silt, trace Shells, moist. ark gray Silty CLAY, moist. ark gray fine SAND, trace Silt, saturated.	0 tc	Steel casing 5 5' bgs ntonite seal 4 5' bgs	
	_ 2	6-8	1.1	3 1 1 1	2	NA		ive-brown grading to light gray (calcareous) fine SAND, trace Silt ells, saturated.	It, trace		
	3	8-10	0.4	7 9 10 10	19	NA		ght gray (calcareous) fine to medium SAND, little coarse Sand, tr edium Gravel, trace Silt, saturated.	Grasilio	ade #1 K&E ca sand pack o 11.5' bgs	
- 10 700	7 - 4	10-1	2 1.1	4 6 9	15	NA	A	above, includes trace coarse Gravel.	Sta 0.0	D Type 304 inless Steel 10" VEE wire apped screen to 11.5' bgs	
	- 5	5 12-1	4 1.4	13 23 15 10 8	25	NA	G G Sa D	ay-brown fine to medium SAND, trace coarse Sand, trace Silt, say-brown fine to coarse SAND and fine to medium GRAVEL, tracturated. Ark gray fine to medium GRAVEL, little fine to coarse Sand, saturated.	ace Silt,		
15 695	- 6	6 14-1	6 0.4	7 10 10 10	20	NA	0.7.4 0.7.4 0.7.4 0.7.4	rk gray coarse SAND and fine GRAVEL, little fine to medium Sa turated.			
Įn.	Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level. No recovery with 2" spoon from 6-10' bgs, used 3" spoon for remaining intervals. Lithology from pilot boring drilled on 11/14/08. Well installed 3/4/09 and 3/11/09.										

Infrastructure, environment, facilities

Vertical Datum: NGVD 1929

Horizontal Datum: NAD 83, Michigan South Zone

Client: Kalamazoo River Study Group

Site Location: Plainwell, Michigan Well/Boring ID: MW-05

Borehole Depth: 22' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-	-	7	16-18	0.8	5 7 8 8	15	NA		Dark gray fine to coarse SAND, little fine to medium Gravel, saturated.	
	-	8	18-20	0.6	6 7 6 6	13	NA		Dark gray coarse SAND and fine GRAVEL, little fine to medium Sand, trace medium Gravel, saturated.	
- 20	690 -	9	20-22	0.0	6 9 9	18	NA		No recovery - likely same as above.	
	-									
— 25	- 685 -									
_	-									
-	-									
- 30	680 -									
_	-									
- 35	-									



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

No recovery with 2" spoon from 6-10' bgs, used 3" spoon for remaining intervals. Lithology from pilot boring drilled on 11/14/08. Well installed 3/4/09 and 3/11/09.

Horizontal Datum: NAD 83, Michigan South Zone

Vertical Datum: NGVD 1929

Date Start/Finish: 3/5/09 and 3/12/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" and 12.25" ID

Rig Type: CME-55 Sampling Method: 3" x 2' Split Spoon

Northing: 350846.5 Easting: 12772491.1 Casing Elevation: 712.1

Borehole Depth: 13' bgs Surface Elevation: 709.2 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-06

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

				1		<u> </u>			
DEPTH ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
710 -	-								Locking J-Plug Steel Protective Casing
	NA	NA	NA	NA	NA	NA		No sample - continuous auger through 21AA stone pad.	Type I Portland/ 5% Bentonite grout 0 to 5.4' bgs 2" ID Type 304 Stainless Steel riser 3' ags to
705 -	1	3-5	1.3	19 14 4 4	18	NA		Dark gray Silty CLAY, trace fine Sand, trace Organics (Roots), moist (frozen).	7.9' bgs 10" Steel casing 0 to 7.4' bgs
-	2	5-7	1.2	2 2 2 1	4	NA		Dark gray-brown mixing with dark gray-black Silty CLAY, trace intermittent fine Sand laminations, trace Organics, soft, moist.	Bentonite seal 5.4 to 7.4' bgs
-	3	7-9	1.3	2 2 2 3	4	NA	二: ····	Dark gray-brown fine SAND, little Silt, trace Organics (Roots), moist.	
— 10	4	9-11	1.2	4 8 11 15	19	NA		Gray-brown fine to coarse SAND and fine to coarse GRAVEL, trace Silt, dense, saturated, calcareous deposits on Gravel.	Grade #1 K&E silica sand pack 7.4 to 12.9' bgs
	5	11-13	1.0	20 14 7 6	21	NA		No calcareous deposits 11.0 - 13.0' bgs.	Stainless Steel 0.010" VEE wire wrapped screen 7.9 to 12.9' bgs
- 695 - - 15									
							 	Remarks: ags = above ground surface; bgs = below ground surface; Applicable/Available; AMSL = Above Mean Sea Le	surface; NA = Not evel.
				DI		ties		Horizontal Datum: NAD 83, Michigan South Zone Vertical Datum: NGVD 1929	

Date Start/Finish: 3/9/09 and 3/12/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" and 12.25" ID

Rig Type: CME-55 Sampling Method: 3" x 2' Split Spoon

Northing: 350555.2 Easting: 12772534.6 Casing Elevation: 712.9

Borehole Depth: 12' bgs Surface Elevation: 708.0 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-07

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
- 73	10 -									Locking J-Plug Steel Protective Casing
- 70	-	NA	NA	NA	NA	NA	NA		No sample - continuous auger through 21AA stone pad.	Type I Portland/ 5% Bentonite grout 0 to 4.2' bgs 10" Steel casing 0 to 6.2' bgs 2" ID Type 304 Stainless Steel riser 3' ags to
- -5		1	4-6	1.2	3 3 3 4	6	NA	-: ± -: ± -: ± -: ±	Gray-brown Silty CLAY, trace Organics (Roots), trace very fine Sand, moderately soft, moist. Dark gray-brown 4.8' - 5.0' bgs. Dark gray-black Silty CLAY, trace Organics (Roots), trace fine SAND, moist.	6.7' bgs Bentonite seal 4.2 to 6.2' bgs
70		2	6-8	1.6	2 2 2 7	4	NA		Dark Gray-brown fine SAND, little Silt, moist. Saturated at 6.5' bgs. Light gray-brown fine SAND grading with little medium to coarse SAND, little fine to medium Gravel at 7.4' bgs, trace Silt, trace shells, saturated.	
_	-	3	8-10	1.3	2 3 3 8	6	NA		Light gray-brown fine to coarse SAND and fine to coarse GRAVEL, trace Silt, trace shells, calcareous deposits on Gravel, moderately loose, saturated. Light gray-brown calcareous fine SAND, little Silt, trace shells, trace medium to coarse Sand, loose, saturated.	Grade #1 K&E silica sand pack 6.2 to 11.7' bgs
- 10 -		4	10-12	1.0	7 8 10 26	18	NA		Light gray-brown calcareous fine to coarse SAND and fine to coarse GRAVEL, trace Silt, moderately dense, saturated. Calcareous deposits prevalent on Gravel.	2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen 6.7 to 11.7" bgs
- 69	95 -									
 15										
					DI		ties	F	emarks: ags = above ground surface; bgs = below ground Applicable/Available; AMSL = Above Mean Sea Horizontal Datum: NAD 83, Michigan South Zone Vertical Datum: NGVD 1929	Level.

Date Start/Finish: 3/10/09 and 3/12/09 **Drilling Company: MATECO**

Driller's Name: Gary Swift, Jack Sanders **Drilling Method:** Hollow Stem Auger **Auger Size:** 4.25" and 12.25" ID

Rig Type: CME-55

Sampling Method: 3" x 2' Split Spoon

Northing: 350171.4 Easting: 12772825.2 Casing Elevation: 711.9

Borehole Depth: 16' bgs

Surface Elevation: 708.9 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-08

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH FI FVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	-								Locking J-Plug Steel Protective
710	1								Casing
-	- NA	NA	NA	NA	NA	NA		No sample - continuous auger through 21AA stone pad.	Type I Portland/ 5% Bentonite grout 0 to 8.3' bgs 2" ID Type 304 Stainless Steel riser 3' ags to
705	1	2-4	1.7	4 4 5 6	9	NA) Н: Н: Н: Н:	Gray-brown Silty CLAY, trace Organics (Roots), trace intermittent fine Sand laminations, moderately soft, moist. Possible Sand contact at 3.7' bgs.	10.8' bgs 10' Steel casing 0 to 10.3' bgs
5	_ 2	4-6	0.8	2 2 2 2	4	NA		Dark gray-black Silty CLAY, trace organics (Roots, veg), moderately soft, moist.	
-	3	6-8	0.5	2 2 2 2	4	NA	-: - -: : : -: : : : -: : : :	Gray-brown Silty CLAY, trace medium to coarse Sand, trace Organics, soft, moist.	
700	4	8-10	0.2	WOH 2 3	5	NA	H: H: H:	Dark gray-brown Silty CLAY, trace fine to coarse Sand, soft, moist. Gray-brown fine SAND, little Silt, moist.	
-10	+			3			<u>.</u>	Gray-brown fine SAND, little Silt, moist. Gray-brown fine SAND, little Silt, trace Organics (wood, shells), moist.	Bentonite seal 8.3 to 10.3' bgs
-	5	10-12	1.2	7 9	16	NA		Gray-brown fine to coarse SAND and fine to coarse GRAVEL, trace Silt, calcareous deposition on Gravel, moderately dense, saturated.	Grade #1 K&E
_	6	12-14	0.4	8 49 50/0.2	NA	NA		Gray COBBLE, some fine to coarse Sand and fine to coarse Gravel, saturated.	silica sand pack 10.3 to 15.8' bgs
_ 695 — 15	7	14-16	0.8	5 7 9	16	NA		Gray-brown fine GRAVEL, little medium to coarse Gravel, little fine to coarse Sand, trace Silt, moderately dense, saturated.	2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen 10.8 to 15.8' bgs
						1		Remarks: ags = above ground surface; bgs = below ground a Applicable/Available; AMSL = Above Mean Sea Le	



Horizontal Datum: NAD 83, Michigan South Zone

Vertical Datum: NGVD 1929

Date Start/Finish: 11/17/08, 3/4/09 and 3/11/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders Drilling Method: Hollow Stem Auger Auger Size: 4.25" ID

Rig Type: CME-55

Sampling Method: 2" x 2' Split Spoon

Northing: 350900.5 Easting: 12773169.1 Casing Elevation: 717.1

Borehole Depth: 26' bgs

Surface Elevation: 714.3 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-09

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description		Well/Boring Construction
_	715 —										Locking J-Plug Steel Protective Casing
-	-	1	0-2	0.6	2 2 2 3	4	NA		wn Sandy Organic SILT, trace Organics (Roots, Wood), tree f nple, damp.	Root in tip of	0 2 2 3 4 4 4 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
-	-	2	2-4	1.0	2 2 2 2	4	NA		k orange-brown fine SAND, trace medium to coarse Sand, trace Silt, damp.	ace fine Gravel,	Type I Portland/ 5% Bentonite grout 0 to 8' bgs 10" Steel casing 0 to 9.2' bgs
- 5	710 -	3	4-6	0.6	2 3 3 4	6	NA				2" ID Type 304 Stainless Steel riser 3' ags to 11.5' bgs
	-	4	6-8	1.2	6 6 11 18	17	NA		ny-brown fine to medium SAND, little coarse Sand, little fine to vel, trace Silt, damp.	medium	
	705 -	5	8-10	1.2	10 20 12 9	32	NA	As	above, moist to wet at bottom of sample.		
- 10 -	-	6	10-12	1.3	5 3 3 5	6	NA	Ora	inge-brown fine SAND, trace Silt, saturated. Inge-brown fine to medium SAND, trace coarse Sand, trace find trace Silt, saturated.	ne to medium	Bentonite seal 8 to 11' bgs
-	-	7	12-14	1.0	4 5 7	12	NA	Ora	inge-brown fine to coarse SAND, little fine to medium Gravel, irated.	trace Silt,	Grade #1 K&E silica sand pack 11 to 16.5' bgs
- - 15	700 -	8	14-16	1.3	16 12 7 5	19	NA	Gra	ny-brown fine to medium SAND, little coarse Sand, trace fine C saturated.	Gravel, trace	2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen 11.5 to 16.5' bgs
					DI		ities	Rer	marks: ags = above ground surface; bgs = backpolicable/Available; AMSL = Above Lithologic descriptions from pilot boring 3/11/09. Horizontal Datum: NAD 83, Michigan	Mean Sea Level. ng drilled on 11/17/08. \	

Vertical Datum: NGVD 1929

Horizontal Datum: NAD 83, Michigan South Zone

Client: Kalamazoo River Study Group Well/Boring ID: MW-09

Site Location: Plainwell, Michigan Borehole Depth: 26' bgs

DEРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-		9	16-18	0.7	13 12	19	NA		Gray-brown fine to medium SAND, little coarse Sand, trace fine Gravel, trace Silt, saturated. Gray-brown coarse SAND and fine GRAVEL, trace fine to medium Sand,	
-	-	9	10-10	0.7	7 7	19	INA		saturated.	
-	- 695 -	10	18-20	1.7	6 6 3 3	9	NA		Gray-brown fine to medium SAND, little coarse Sand, trace fine to medium Gravel, loose, saturated.	
- 20	-	11	20-22	1.7	2 3 6 7	9	NA			
-	-	12	22-24	1.7	4 4 4	8	NA			
_ — 25	- 690 - -	13	24-26	1.2	7 2 2 2 2 4	4	NA			
-	_									
-	685 -									
- 30	_									
-	_									
-	-									
-	_									
-	680 —									
35	_									



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Lithologic descriptions from pilot boring drilled on 11/17/08. Well installed 3/4/09 and 3/11/09.

Horizontal Datum: NAD 83, Michigan South Zone

Date Start/Finish: 11/11/2008, 3/3/09 and 3/17/09

Drilling Company: MATECO

Driller's Name: Gary Swift, John Olson Drilling Method: Hollow Stem Auger

Auger Size: 4.25" ID Rig Type: CME-55

Sampling Method: 2" x 2' Split Spoon

Northing: 350303.0 Easting: 12774070.0 Casing Elevation: 712.7

Borehole Depth: 16' bgs Surface Elevation: 709.7 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-10

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

							1			
DEРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-	710 —									Locking J-Plug Steel Protective Casing
-	_	1	0-2	1.3	2 3 4 4	7	NA		Dark brown Organic SILT, trace fine Sand, trace Organics, damp. Orange-brown fine to medium SAND, little coarse Sand, trace fine to medium Gravel, trace Silt, loose, damp.	Type I Portland/ 5% Bentonite grout 0 to 2' bgs 2" ID Type 304 Stainless Steel
_	-	2	2-4	1.0	1 1/ 12"	1	NA	±: =:= =:=	Gray-brown grading to dark gray Silty CLAY, trace Organics (highly degraded), damp.	riser 3' ags to 4.5' bgs Bentonite seal 2 to 4' bgs 10" Steel casing 0 to 4' bgs
— 5	705 -	3	4-6	1.0	2 1 1 1	2	NA		Dark gray-brown fine SAND, trace to little Silt, trace Shells, saturated.	Violands
_	_	4	6-8	1.1	NA	NA	NA		Light gray-brown Silty fine to medium GRAVEL, little fine to coarse Sand, loose, saturated. Light gray calcareous discoloration throughout.	Grade #1 K&E silica sand pack 4 to 9.5' bgs
_ 10	700 -	5	8-10	0.4	7 5 13 8	18	NA		As above, poor recovery due to coarse Gravel in tip of shoe.	2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen 4.5 to 9.5" bgs
	-	6	10-12	0.8	7 4 4 7	8	NA		Light gray-brown fine to medium GRAVEL, little fine to coarse Sand, trace Silt, saturated. Light gray calcareous Silt throughout.	
-	-	7	12-14	0.9	4 5 7 9	12	NA		Dark gray-brown fine to coarse SAND, little fine to medium Gravel, trace Silt, loose, saturated.	
15	695 - -	8	14-16	0.7	3 4 4 6	8	NA			
									Remarks: ags = above ground surface; bgs = below ground s	surface; NA = Not



ags = above ground surface; bgs = below ground surfa Applicable/Available; AMSL = Above Mean Sea Level.

Lithologic descriptions from pilot boring drilled on 11/11/08. Well installed 3/3/09 and 3/17/09.

Horizontal Datum: NAD 83, Michigan South Zone

Vertical Datum: NGVD 1929

Date Start/Finish: 11/11/08, 3/3/09 and 3/17/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" ID

Rig Type: CME-55 Sampling Method: 2" x 2' Split Spoon

Northing: 350789.2 Easting: 12774553.7 Casing Elevation: 712.4

Borehole Depth: 14' bgs Surface Elevation: 709.7 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-11

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description		Well/Bo Constru	-
- 7.	-											Locking J-Plug Steel Protective Casing
-	-	1	0-2	1.3	2 3 5 9	8	NA	☐ G	ark brown Organic SILT, trace Organics, damp. ay Silty CLAY, moist. bwn fine to medium SAND, trace Shells, loose, moist.			Type I Portland/ 5% Bentonite grout 0 to 2.5' bgs
	-	2	2-4	1.6	2 2 2 2	4	NA	Lig	ay Silty CLAY, trace Organics, damp. Inth brown fine SAND, trace Silt, moist. Introduction of the state of	st.		10" Steel casing 0 to 4' bgs Bentonite seal 2.5 to 4.5' bgs
- -5	05 -	3	4-6	0.7	1 1 1 1	2	NA		ay-brown fine to medium SAND, trace coarse Sand, trace Silt, turated.	trace Shells,	*	2" ID Type 304 Stainless Steel riser 3' ags to 5' bgs
	-	4	6-8	0.5	1 1 1 1	2	NA	As	above, Little Silt.			— Grade #1 K&E silica sand pack 4.5 to 10' bgs
7:	00 -	5	8-10	0.6	3 3 4 6	7	NA		ay-brown fine to medium SAND, trace coarse Sand, trace fine t avel, trace light gray Silt in tip of sampler, trace Shells, loose, s			— 2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen
	-	6	10-12	1.0	7 4 7 6	11	NA	Da	rk gray-brown fine to coarse SAND, little fine Gravel, loose, sat	turated.		5 to 10' bgs
-	- -	7	12-14	0.7	3 3 3 3	6	NA		ay-brown fine to coarse SAND, trace fine to medium Gravel, traturated.	ace Silt, loose,		
6. — 15	95 – –											
					DI		ities	Re	arks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level. Lithologic descriptions from pilot boring drilled on 11/11/08. Well installed 3/3/09 and 3/17/09.			

Date Start/Finish: 11/10/08, 3/16/09 and 3/18/09

Drilling Company: MATECO

Driller's Name: Gary Swift, Jack Sanders Drilling Method: Hollow Stem Auger Auger Size: 4.25" and 12.25" ID

Rig Type: CME-55

Sampling Method: 3" x 2' Split Spoon

Northing: 350726.9 Easting: 12775210.9 Casing Elevation: 715.4

Borehole Depth: 11' bgs

Surface Elevation: 712.4 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-12

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DЕРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	715 - -	52								Locking J-Plug Steel Protective Casing
-	- - 710 -	1	0-3	NA	NA	NA	NA		No sample - continuous auger through 21AA stone pad.	Type I Portland/ 5% Bentonite grout 0 to 2' bgs 10" Steel casing 0 to 3.5' bgs 2" ID Type 304 Stainless Steel riser 3' ags to 4' bgs
- - -5	-	2	3-5	0.3	4 6 10 6	16	NA		Gray-brown fine to medium SAND, trace coarse Sand, trace fine Gravel, trace Silt, saturated.	Bentonite seal 2 to 3.5' bgs
-	-	3	5-7	1.1	2 2 2 7	4	NA		Gray-brown grading to dark gray-brown fine to medium SAND, trace coarse Sand, trace fine to medium Gravel, trace Silt, loose, saturated.	Grade #1 K&E silica sand pack 3.5 to 9' bgs
-	705 — —	4	7-9	0.7	3 4 1 6	5	NA		Dark gray-brown fine SAND, trace medium to coarse Sand, trace Silt, trace shells, loose, saturated. Light gray calcareous fine SAND, little Silt, trace medium to coarse Sand, trace	2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen 4 to 9' bgs
-10	-	5	9-11	1.2	21 21 20 13	41	NA		fine Gravel, saturated. Olive-brown fine to coarse SAND and fine to coarse GRAVEL, trace Silt, dense saturated.	_
-	- 700 -									
- 15	-									
	C	2	AR	CA	ADI	S		R	Remarks: ags = above ground surface; bgs = below ground Applicable/Available; AMSL = Above Mean Seath Lithologic descriptions from pilot boring drilled of 3/18/09.	Level.

Infrastructure, environment, facilities

Vertical Datum: NGVD 1929

Horizontal Datum: NAD 83, Michigan South Zone

Date Start/Finish: 11/11/08, 3/2/2009 and 3/17/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" and 12.25" ID

Rig Type: CME-55

Sampling Method: 2" x 2' Split Spoon

Northing: 350420.2 Easting: 12774429.7 Casing Elevation: 714.4

Borehole Depth: 18' bgs Surface Elevation: 711.3 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-13

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-										Locking J-Plug Steel Protective Casing
-	710 -	1	0-2	1.4	2 2 1	3	NA	H	Dark brown Organic SILT, trace Organics, damp. Orange-brown fine to medium SAND, little coarse Sand, trace fine Gravel, loose, damp. Gray-brown Clayey SILT, trace fine Sand, damp.	Type I Portland/ 5% Bentonite grout 0 to 4.5'
-	- -	2	2-4	0.4	2 2 2 2	4	NA	: : : : : : : :	Gray-brown Silty CLAY, trace highy degraded natural Organics, moist.	bgs 10" Steel Double casing 0 to 6' bgs 2" ID Type 304
- 5	-	3	4-6	0.7	1 1 1	2	NA	+	As above, grading to dark gray-brown in color at 4.5' bgs, gray-brown fine to medium Sand seam at 4.5' bgs, moist.	Stainless Steel riser 3' ags to 7' bgs Bentonite seal 4.5 to 6.5' bgs
	705 -	4	6-8	0.6	1 1 1 4 5	5	NA		Gray-brown fine to medium GRAVEL, little fine to coarse Sand, trace light gray (calcareous) Silt throughout, loose, saturated.	4.5 to 6.5' bgs
	-	5	8-10	0.6	4 4 7 9	11	NA			Grade #1 K&E silica sand pack 6.5 to 12' bgs
- 10 -	700 -	6	10-12	0.7	7 9 14 15	23	NA		As above, trace light gray Silt discoloration, gray calcareous deposits on gravel.	2" ID Type 304 Stainless Steel 0.010" VEE wire wrapped screen
	-	7	12-14	0.2	5 6 8	14	NA		GRAVEL in tip of shoe.	7 to 12' bgs
- - 15	- -	8	14-16	0.9	3 4 6 6	10	NA		Gray-brown fine to coarse SAND, little fine to medium Gravel, trace Silt, loose, saturated.	
					DI		ties		Remarks: ags = above ground surface; bgs = below ground s Applicable/Available; AMSL = Above Mean Sea Le Lithologic descriptions from pilot boring drilled on 1 3/17/09.	evel.

Vertical Datum: NGVD 1929

Horizontal Datum: NAD 83, Michigan South Zone

Client: Kalamazoo River Study Group

Site Location: Plainwell, Michigan Borehole Depth: 18' bgs

Well/Boring ID: MW-13

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
_	695 – –	9	16-18	0.5	4 7 3 5	10	NA		Gray-brown fine to medium GRAVEL, little fine to coarse Sand, trace Silt, loose, saturated.	
_	-									
- 20	- 690 -									
	-									
<u> </u>	-									
-	685 - -									
_ 30	-									
-	680 –									
-	-									
- 35	-									



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Lithologic descriptions from pilot boring drilled on 11/11/08. Well installed 3/2/09 and 3/17/09.

Horizontal Datum: NAD 83, Michigan South Zone

Vertical Datum: NGVD 1929

Page: 2 of 2

Date Start/Finish: 11/10/2008, 3/3/09 and 3/16/09

Drilling Company: MATECO

Driller's Name: Gary Swift, Jack Sanders Drilling Method: Hollow Stem Auger

Auger Size: 4.25" ID Rig Type: CME-55

Sampling Method: 2" x 2' Split Spoon

Northing: 350664.3 Easting: 12774948.4 Casing Elevation: 712.5

Borehole Depth: 16' bgs Surface Elevation: 709.5 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-14

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEРТН	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-	710 —									Locking J-Plug Steel Protective Casing
-	-	1	0-2	1.7	2 2 2 2	4	NA		Dark brown SILT, trace fine Sand, trace Organics (Roots), damp. Brown fine to medium SAND, trace Silt, loose, damp. Light gray Clayey SILT, damp. Dark brown Organic SILT, trace Organics (Roots), damp.	Type I Portland/ 5% Bentonite grout 0 to 2' bgs 10" Steel casing 0 to 3' bgs
-	-	2	2-4	1.3	1 1 1	2	NA		Dark brown Silty fine SAND, trace Organics (highly degraded), moist to wet. at 2': Wet. Gray-brown fine SAND, trace medium to coarse Sand, trace Silt, wet.	Bentonite seal 2 to 3.5' bgs 2" ID Type 304 Stainless Steel riser 3' ags to 4'
- 5	705 — —	3	4-6	1.6	1 1 1 2	2	NA		Brown SILT, trace fine Sand, wet. Light gray-brown fine SAND, little Silt, trace medium to coarse Sand, trace fine to medium Gravel, saturated. (Light gray SILT in Sand/Gravel matrix).	bgs
-	- - -	4	6-8	1.0	4 4 4 4	8	NA		Gray-brown fine to coarse SAND, trace fine to medium Gravel, trace Silt, saturated.	Grade #1 K&E silica sand pack 3.5 to 9' bgs
- 10	700 -	5	8-10	1.0	NA	NA	NA		As above, grading to dark gray at 8.7' bgs.	Stainless Steel 0.010" VEE wire wrapped screen 4 to 9' bgs
-	_	6	10-12	0.9	2 3 3 4	6	NA		Dark gray fine to medium GRAVEL, little fine to coarse Sand, trace Silt, saturated.	
-	- -	7	12-14	1.0	2 3 3 4	6	NA			
- 15	695 - -	8	14-16	0.7	3 3 3 5	6	NA			
									Remarks: ags = above ground surface; bgs = below ground s	surface: NA = Not



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

> Lithologic descriptions from pilot boring drilled on 11/10/08. Well installed 3/3/09 and 3/16/09.

Horizontal Datum: NAD 83, Michigan South Zone

Vertical Datum: NGVD 1929

Date Start/Finish: 11/11/08, 3/2/2009 and 3/17/09

Drilling Company: MATECO
Driller's Name: Gary Swift, Jack Sanders **Drilling Method:** Hollow Stem Auger **Auger Size:** 4.25" and 12.25" ID

Rig Type: CME-55

Sampling Method: 2" x 2' Split Spoon

Northing: 350413.0 Easting: 12774893.2 Casing Elevation: 713.8

Borehole Depth: 18' bgs

Surface Elevation: 710.8 ft AMSL

Descriptions By: Ron Kuhn

Well/Boring ID: MW-15

Client: Kalamazoo River Study Group

Location: Plainwell, Michigan

DEPTH	ELEVATION Secolo Bire Nimber	Sample Kun Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-	-									Locking J-Plug Steel Protective Casing
710	· -	1	0-2	1.5	1 2 2 3	4	NA	H	Dark brown Organic SILT, trace moderately degraded Organics, damp. Gray-brown Clayey SILT, trace fine Sand, trace Organics, damp. Orange-brown fine SAND, trace Silt, damp.	Type I Portland/ 5% Bentonite grout 0 to 4' bgs 2" ID Type 304 Stainless Steel riser 3' ags to 6.5' bgs
-	2 2-4 0.9 2 4 NA 3								Orange fine SAND, trace Silt, trace medium Gravel, moist.	10" Steel Double casing 0 to 5" bgs
5 705	- 5 -	3	4-6	0.5	1 2 3 3	5	NA		As above, Saturated.	Bentonite seal 4 to 6' bgs
-	+	4	6-8	0.8	3 4 4 3	7	NA		Gray-brown fine to medium SAND, little coarse Sand, trace fine to medium Gravel, trace Silt, loose, saturated. Gray-brown fine to coarse SAND, little fine to medium Gravel, trace Silt,	Grade #1 K&E silica sand pack 6 to 11.5' bgs
- 10	- - -	5	8-10	0.8	5 4 4 3	9	NA		saturated.	2" ID Type 304 Stainless Steel
700		6 1	0-12	1.2	4 4 7 3	8	NA		As above, grading to dark gray at 12.4' bgs.	0.010" VEE wire wrapped screen 6.5 to 11.5' bgs
-	1	7 1	2-14	0.6	6 4 4 2	10	NA		Dark gray fine GRAVEL, little fine to coarse Sand, saturated.	
— 15 695		8 1	4-16	0.4	3 3 4	6	NA		emarks: ags = above ground surface; bgs = below ground Applicable/Available; AMSL = Above Mean Sea L	surface; NA = Not
1	G		AR	CA	DI	S			Lithologic descriptions from pilot boring drilled on 3/17/09.	

Horizontal Datum: NAD 83, Michigan South Zone

Vertical Datum: NGVD 1929

Client: Kalamazoo River Study Group

Site Location: Plainwell, Michigan Well/Boring ID: MW-15

Borehole Depth: 18' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	-	9	16-18	0.0	3 3 3 4	6	NA		No recovery - slough.	
- 20	690 -									
- - 25	- 685 -									
- 30	680 —									
- - 35	- 675 -								Pamarks: ags – above ground surface; bgs – below ground s	



Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level.

Lithologic descriptions from pilot boring drilled on 11/11/08. Well installed 3/2/09 and 3/17/09.

Horizontal Datum: NAD 83, Michigan South Zone

Vertical Datum: NGVD 1929

ARCADIS

Attachment 3

Groundwater and Surface Water Sampling Logs

ARCADIS

Attachment 3A

Groundwater and Surface Water Sampling Logs – Quarter 1 - April 2009

GROUNDWATER SAMPLING LOG

Purging Information	
Depth to Water Georgian Georgian Georgian Depth to Water Georgian Georgia	1117-
Depth to Water Geet G. SC Composition Geet C. SC Composition Geet Composition Geet Composition Geet Composition Geet Composition Geet Composition Geet Composition Geet Composition Geet Composition Geet Composition Geet Composition Geet Composition Geet Ge	Time Out: 1455
Length of Water Column: (feet) S.7.5 Well Locked: Yes E	Flushmount ☐ Stick-Up √
Length of Water Column:	Stainless Steel √ PVC □
Measuring Point Marked: Yes Property Measuring Point Measuring Point Marked: Yes Property Measuring Point Mea	
Purging Information	D 5
Purging Information Purping Method: (Pertisability Pumpl) Sampling Method: (Pertisability Pumpl) Sampling Method: Sampling Other: Sampling Method: Sampling Other: Sampling Method: Sampling Method: Sampling Method: Sampling Other: Sampling Method: Sampling Method: Sampling Other: Sampling Method: Sampling Other: Sampling Method: Sampling Method: Sampling Other: Sampling Method: Sampling Other: Sampling Method: Sampling Other: Sampling Method: Sampling Other: Sampling Method: Sampling Other: Sampling Other: Sampling Method: Sampling Other: Sampling Other: Sampling Other: Sampling Other: Sampling Other: Sampling Other: Sampling Other: Sampling Other: Sampling Other: Sampling Other: Sampling Other: Sampling Other:	<u> </u>
Tubing Material: Silicone Polyethylene Teflon Other: O	<u> </u>
Tubing Material: Sampling Method: Barnant GeoPump Submersible Other. O	Conversion Factors
Duration of Pumping:	gai/it.
Average Pumping Rate: (ml/min)	1 gal = 3.785 L =3785 ml = 0.1337 cubic feet
Average Pumping Rate:	Unit Stability, WITH TURBIDITY <5 NTU
Total Volume Removed: (gal) Did well go dry: Yes (No) V 0.1 V 10% V	
Time:	∀ 0.1
Volume Purged (L)	8 9 10 11 12
Volume Purged (I.) 1.00	1320 1325 1330 1335
Rate (mL/min) 160	
Depth to Water (ft.) C. 92 C. 82	
Temp. (C)	100 100
Temp. (C)	
Conductivity (mS/cm)	
Dissolved Oxygen O 96 O 57 O 46 O 39 O 33 O 29 O 30 O 31 O 27 O 25 ORP (mV) - 109.4 - 113.7 - 115.7 - 117.8 - 118.7 - 121.1 - 120.9 - 121.2 - 12-12 Turbidity (NTU) Notes: Analyses # of Containers Chloride, Sulfate, & Alkalinity. (250 ml) TOCs (40 ml with H ₂ SO ₄) Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): Coop Well Lock Present? VG4 Lock Condition Coop Well Lock Present? VG4 Lock Condition Coop Well Lock Present? VG4 Lock Condition Coop Well Lock Present? VG4 Lock Condition Coop Well Lock Pres	
ORP (mV) Turbidity (NTU) 13.5 12.9 1.5 1.9 (0.2 9.19 8.60 6.50 5.77 5.66 Purge Water Description (Color? Odor? Turbid? Other?) Initial Purge: Clear, No ODOR. Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): Coop Well Lock Present? V64 Lock Condition: Canal State of Containers Analyses # of Containers Analyses Chloride, Sulfate, & Alkalinity. (250 ml) TSS (11 Poly) PCBs (Total) (Amber) INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTAL Sample ID: TSHOOLY Sample Time: Well Lock Present? V64 Lock Condition: Canal State of Color of Coop Sample ID: TSHOOLY Sample Time:	
Turbidity (NTU) Notes: Analyses	7 -121.2 -10-1206-1206-122.5
Analyses # of Containers Chloride, Sulfate, & Alkalinity. (250 ml) TOS (11 Purge: CLEAR, NO ODOR. Final Purge: CLEAR, NO ODOR. Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): Coop Well Cap/expansion plug: Coop Well Lock Present? VGA Lock Condition: Coop Well Lock Present? VGA Lock Condit	
Purge Water Description (Color? Odor? Turbid? Other?) Initial Purge: CLGAR, NO ODOR. Final Purge: CLGAR, NO ODOR. Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): Good Locking Protective Well Cap/expansion plug: Good Well Lock Present? VGA Lock Condition: Good Well Lock Present? VGA Lock Condition: Good Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Analyses Containers Analyses Containers Analyses Containers Analyses Analyses Containers Analyses Containers Analyses Containers Analyses Containers Analyses Analyses Containers Analyses Analyses Containers Analyses Containers Analyses Analyses Containers Analyses Analyses Containers Analyses Analyses Analyses Analyses Containers Analyses Alkalinity. (250 ml) Total Metals (250 ml) with HNO ₃) TDS (250 ml) Surface Seal Condition (concrete pad, bolts, manhole cover): Surface Seal Condition (Concrete pad, bolts, manhole cover): Surface Seal Condition (Concrete pad, bolts, manhole cover): Surface Seal Condition (Concrete pad, bolts, manhole cover): Surface Seal Condition (Concrete pad, bolts, manhole cover): Surface Seal Condition (Concrete pad, bolts, manhole cover): Surface Seal Condition (Concrete pad, bolts, manhole cover): Surface Seal Condition (Concrete pad, bolts, manhole cover): Surface Seal Condition (Concre	
TOCs (40 ml with H ₂ SO ₄) Well Integrity Information Furface Seal Condition (concrete pad, bolts, manhole cover): Cocking Protective Well Cap/expansion plug: Well Lock Present? VC4 Lock Condition: Cocking Protective Well Cap/expansion plug: Well Lock Present? VC4 Lock Condition: Cocking Protective Well Cap/expansion plug Protective Well Cap/expansion plug Protective Well Cap/expansion plug Protective Well Ca	Analyses # of Containers
Final Purge: CLEAR, NO ODOR. Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): Coop Locking Protective Well Cap/expansion plug: Coop Well Lock Present? VG4 Lock Condition: Coop Well Lock Present? VG4 Lock Condition: Coop Well Lock Present? VG4 Lock Condition: Coop Well Lock Present? VG4 Lock Condition: Coop TSS (1 L Poly) PCBs (Total) (Amber) TDS (250 ml) INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTAL Sample ID: TSHOO IH Sample Time:	Chloride, Sulfate, &
Well Integrity Information Well Concrete pad, bolts, manhole cover): Coop Well Cap/expansion plug: Coop Well Lock Present? VG4 Lock Condition: Coop (1 L Poly) PCBs (Total) (Amber) INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTAL Sample ID: 7540014 Sample Time:	(250 ml) \leftarrow
Cocking Protective Well Cap/expansion plug: Coop Well Lock Present? VG4 Lock Condition: Good (Amber)	(250 ml with HNO ₃)
Cocking Protective Well Cap/expansion plug: Coop Sample ID: 7540014 Sample Time: Well Lock Present? V64 Lock Condition: Coop Well Lock Present? V64 Lock Condition: Coop Sample ID: 7540014 Sample Time: V65 No. 10400000000000000000000000000000000000	
Well Lock Present? VG4 Lock Condition: Case Sample ID: \\ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \\ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present? VG4 Lock Condition: Case Sample ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \frac{5400}{5400} \] Very Molt Lock Present ID: \ \fra	SPLIT IN AMOUNT TOTALS
Well Lock Present? VC4 Lock Condition: Canal	Sample Time: 1240
	plicate: Yes No
Other: Duplicate ID: TS 400 15 Dup. Time:	Dup. Time:
OVERSIGHT SAMPLE ID: TIME: Sampled By: MEK Log Reviewed By: MEK	Reviewed By: MCK
P A All samples submitted under COC to TAL of South Burlington, Vermont.	South Burlington, Vermont.
G:\COMMON:64583\CW Sampling\gw sampling log quarterly.doc ARCADIS	Page L of 2

GROUNDWATER SAMPLING LOG

Sampling Personnel:	M. KOHAGE	cal					Well ID:		-					
Client / Job Number:		7.0000 Task 0	0500				Date:		109					
Weather: GO* F,	CLEAR, L	T Wind					Time In	12	15	Time (Out:		-	
Depth to Water:	(feet)		and the	TIC	5	Well T	уре:			Flushmou	nt 🗆	S	tick-Up	V
Total Depth:	(feet)		/	(TIC	_		laterial:	7	9	tainless Ste	.1		PVC	¬
Length of Water Column:	(feet)					Well L	ocked:				es . D		No	
Volume of Water in Well:	(gal)			_			ring Point N	Narked:						7
Three Well Volumes:	(gal)			Sé	e -		iameter					Other:	No	
Purging Information				00	#/	1	differen		1.	Ц	2° V	Outer.		
Purging Method:	Barnant	7 GeoPt	ımp d	P	Submersible					<u> </u>	Conve	sion Fac	tors	
(Peristaltic Pump)	L			1		П ,	Other:			gal / ft.	1° ID	2" ID	4° ID	6° ID
Tubing Material:	Silicone	Polyeti	nylene		Teflon		Other:			of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant	Geo	Pump		Submersible		Other:			1 gal = 3.	785 L =37	785 ml = 0).1337 c	ubic feet
Duration of Pumping:	(min)									Unit Ctol	Lilida AAA	TU TUD	DIDITY	e NTU
Average Pumping Rate:	(ml/min)		Wa	ater-Qual	ity Meter Type	e: Y	SI-556 &		1	Unit Stal	DO DO	Con		ORP
Total Volume Removed:	(201)			The same of		-	2100		-	∀ 0.1	∀ 10%	∀ 3.0	-	/ 10 mV
Total volume Removed.	(gal)				Did well go dry	y. 16	5	No						
	1	. 2	3		4 5		6	7	8	9.	1	10	11	12
Time:	1348								a training					
Volume Purged (L)	7.00								24	1. 83.			34.	
Rate (mL/min)	100										-			
Depth to Water (ft.)	6.82													
pH	7.26							1 65	4					
Temp. (C)	10.88													
Conductivity (mS/cm)	0.965	Mari di												
Dissolved Oxygen	0.22													
ORP (mV)	-123.3							in .		Photos.	-			
Turbidity (NTU)	4.06			- 1111										
Notes:	1.00													
					1				1.7	<u> </u>				
Purge Water Description	(Color? Odo	r? Turbid? O	ther?)		Anai	lyses	# o Cor	r ntaine	rs Ai	nalyses			# of Conta	iners
nitial Purge:					TOGS (40 ml with	H ₂ SO ₄)			All	loride, Sulfa calinity.	ate, &			
Final Purge:				/	TSS	- "			To	50 ml) tal Metals 50 ml with H	NO			
Well Integrity Information	<u>on</u>		/	1	PCBs (Tota	I)			TO	s	NO ₃)			
Surface Seal Condition (co	oncrete pad, bo	olts, manhole co	ver):		Amber			7	-	50 ml)				
ocking Protective Well C	Cap/expansion	plug:		00	1		NCLUDE C	VERS	GHT SP	LIT IN AMO	UNITO	TALS		
Well Lock Present?	Łock Condi			rr	Sample ID:		es No		Dunle		nple Tim Yes	e: No		
Other:					WONVISU.									
OVERSIGHT SAMPLE	Duplicate ID: Dup. Time: Sampled By: Log Reviewed By:													
OVERSIGHT SAMPLE ID: TIME:										eviewed By				
6					All samples	submitte	ed under CC	C to T	AL of So	uth Burlingto	n, Verm	ont.		

GROUNDWATER SAMPLING LOG

Spring 2009 EVENT

Plainwell, Michig	an							,				
Sampling Personnel:	M. Konnoe	س					Well ID: ./	1W-3				
Client / Job Number:	B006453	7.0000 Tas	sk 00500				Date: 4/15					-
Weather: 50°F, CI	EAR, MOS	Ding.					Time In: \	215	Time (Out: 14	16	
Well Information		0 07			-	10. U.T.						
Depth to Water.	(feet)	3 75		(TIC)		Well Type			Flushmou	nt 🗆	Stick-	Up V
Total Depth:	(feet)	2		(TIC)	-	Well Mate	rial:		Stainless Ste	el √	P	vc 🗆
Length of Water Column:	(feet)	4.92				Well Lock	ed:		Ye	es . I		No 🗆
Volume of Water in Well:	(gal) 🛆	802			-	Measuring	Point Mark	ed:	Ye	es 🖟		No 🗆
Three Well Volumes:	(gal)	2.71				Well Diam	eter:	1"		2" √	Other:	
Purging Information	PUMP O	n @ 13	230	IFF B	1355							
Purging Method: (Peristaltic Pump)	Barnant [] Ge	eoPump [3	Submersible	Othe	er:				on Factors	3
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	ır.		gal / ft. of water			ID 6" ID
Sampling Method:	Barnant		GeoPump	D S	ubmersible	Othe	er:					7 cubic feet
Duration of Pumping:	(min)	85										4
Average Pumping Rate:	(ml/min)	les of less	N	/ater-Qualit	y Meter Type:	YSI-	556 & Ha	ach	Unit Stat	DO DO	Cond.	TY <5 NTU ORP
							2100P		∀ 0.1	∀ 10%	∀ 3.0%	∀ 10 mV
Total Volume Removed:	(gal)	2.25	N	- D	id well go dry:	: Yes	(No	2,				
	1	2	3	4	5.	6	7	8	9	10	. 1	1 12
Time:	1240	1245	1250	1255	1300	1305	1310	1315	1320	1325		1
Volume Purged (L)	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50		
Rate (mL/min)	100	100	100	100	100	100	100	100	100	106		
Depth to Water (ft.)	8.86	8.86	8.86	8.86	8.86	8.84	8.86	8.86	8.86e	8.86		N
pH	7.23	7.18	7.13	7.10	7.09	7.12	7.10	7.12	7.08	7.08	1 /	WA
Temp. (C)	10.06	10 57	10.67	10.87	10.82	10.77	10.72	10.70		10.87		
Conductivity (mS/cm)	1.096	1.084	1.073	1.067	1.064	1.059	1.055	1.052	-	1039	1	X
Dissolved Oxygen	0.41	0.37	0.43	0.36	0.29	0.26	0.24	0.26	0.25	0.24	17	4
ORP (mV)	- 88.1	-86.0	-86.Z	-89.8		-88.3	-88.3	-90.1	-912	-90.4	1/	
Turbidity (NTU)	30.8	20.2	16.6	14.3	10.8	7.82	5.49	4.80	414	3.97	/	
Notes:	2.0	W.L	16.6	11.0	10.0	1.02	3,11	1.00	1.0	J. 1/		
					1		# of		1		4 -4	
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	Contai	ners A	nalyses		# of	ntainers
Initial Purge: SLT (TOCs		2		hloride, Sulfa	ate, &	1	
			105			40 ml with H ₂ SO ₄)		(250 ml)			
Final Purge: CLEAR	1 NO 01	DOK.			TSS (I L Poly)			Total Metals (250 ml with HNO ₃)				
Well Integrity Information	<u>on</u>				PCBs (Total) (Amber) TDS (250 ml)							
Surface Seal Condition (co	oncrete pad, b	olts, manho	le cover): (5000		INC	LUDE OVE		PLIT IN AMO	UNT TOTA	LS	Carried March

Locking Protective Well Cap/expansion plug:

Well Lock Present? VES

OVERSIGHT SAMPLE ID:

Other:

MA

MFK

Sample ID:

Duplicate ID:

Sampled By:

NA

MS/MSD:

1325

MA

Dup. Time:

Duplicate:

All samples submitted under COC to TAL of South Burlington, Vermont.

Log Reviewed By:

GROUNDWATER SAMPLING LOG

Sampling Personnel:	A.01		1.00500				Vell ID:	W-4	a				
Client / Job Number: Weather: 50° 0		7.0000 Tas	sk 00500				ime In:	15-0	Time	Outs 1	105		
Well Information	vercas	T				- '	ime in: O	145	rime	Out: /	05		
Depth to Water:		0.25		(TIC)		Well Type:			Flushmou	unt 🛘	Stick	k-Up	1
Total Depth:		14.46	Share	(TIC)	_	Well Materi	al:	s	tainless Ste	el V	1	PVC	
Length of Water Column:		4.21			_	Well Locke	d:		Y	es . V		No	
Volume of Water in Well:		168				Measuring	Point Marke	ed:	Y	es 🗆		No	U
Three Well Volumes:	(gal)	2.05			-	Well Diame	ter:	1"		2" √	Other:		
Purging Information												4117	
Purging Method: (Peristaltic Pump)	Barnant	Ge	eoPump [Y 5	Submersible	Other				T	sion Facto	rs	
Tubing Material:	Silicone	Po	lyethylene	П	Teflon	Other.			gal / ft. of water	1" ID		4" ID	. 6" ID
Sampling Method:	Barnant	П	GeoPump	√ s	ubmersible	☐ Other				785 1 = 378	0.163 0 85 ml = 0.13	0.653 337 cu	1.469
Duration of Pumping:	(min)	65				U						147	*
Average Pumping Rate:	(ml/min)		14	later-Onalit	y Meter Type		556 & Ha	ch			H TURBIC	YTIC	
	(11421141)	100	**************************************	alci-Qualii	y Weter Type	4	2100P		pH ∀ 0.1	DO ∀ 10%	Cond. ∀ 3.0%	A	ORP 10 mV
Total Volume Removed:	(gal)	1.71		D	id well go dry	r. Yes	(No)	V 0.1	V 1070	V 0.076	1.	10 1110
	1	2	3	4	5	6	7	8	9	1	0	11	. 1:
Time:	1005	1010	1015	1020	1025	1030					6		
Volume Purged (L)	1	1.5	2	2.5	3	3.5			:			2010	
Rate (mL/min)	100	100	100	100	100	100							
Depth to Water (ft.)	10.26	10.26	10.26	10.26	10.26	10.26	- 4	144.					
pH	7.25	7.25	7.25	7.22	7.19	7.19							
Temp. (C)	9.34	9.34	9.38	9.47	9.52	9.52							
Conductivity (mS/cm)	1.078	1.060	1.043	1.034	1.032	1.031							
Dissolved Oxygen (mg)	,47	.38	138	,36	1,44	.39							
ORP (mV)	-104.1	- 97.5	-101.8	-100.9	5 - 97.7	-101.2		1	1				
Turbidity (NTU)	6.90	4.81	2.52	1.63	1.43	1.19							
Notes:	Sal 7												
Purge Water Description (Color? Od	or? Turbid	? Other?)		Anal	yses	# of Contain	ners Ai	nalyses		# c		iners
Initial Purge: Clear		1			TOCs (40 ml with	H ₂ SO ₄)	2	All	nloride, Sulf kalinity. 50 ml)	ate, &		1	
Final Purge: Clear	/no	odor			TSS (I L Poly)		. 1	To	tal Metals 50 ml with I	INO ₃)		1	
Well Integrity Information					PCBs (Tota (Amber)	1)	2	Т	OS 50 ml)			1	
Surface Seal Condition (con	crete pad, b	olts, manho	le cover): C	accl	(Allinet)	INCI	UDE OVER			DUNT TOT	ALS	1	
ocking Protective Well Ca	p/expansion	plug: QO	od	,									
Well Lock Present? Y 15)	. 1		Sample ID: 754007 Sample Time: /030 MS/MSD: Yes (No) Duplicate: Yes (No)								
Other:		5.			Monada.								
OVERSIGHT SAMPLE II	D:		TIME		Duplicate ID			Long		p. Time:			
	Pump on 0955 Pump off 1100						All samples submitted under COC to TAL of South Burlington, Vermont.						

GROUNDWATER SAMPLING LOG

Sampling Personnel:	M. Ko	MAGEN	2 36			,	Well ID:	1W-5					
Client / Job Number:		7.0000 Ta					Date: 4	15 09			-		
Weather: 40°	S, OVERCA	ST, Mol	DW.ND.				Time In: O	943	Time	Out: 11	20		
Depth to Water:	(feet)	10.13		(TIC)	•	Well Type:		B	Flushmou	ınt 🗆	Stic	ck-Up	1
Total Depth:	(feet)	14.23		(TIC)		Well Mater	rial:	s	tainless Ste	-1		PVC	
Length of Water Column:	(feet)	4.10				Well Locke	ed:			es D		No	
Volume of Water in Well:	(gal)	0.67					Point Mark	ed:		es D		No	
Three Well Volumes:	(gal)	2.00			-	Well Diam		1*		2° √	Other:	140	
Purging Information	PUMP	on 0	955	OFF	-@ 1/10				U .	2 1			
Purging Method: (Peristaltic Pump)	Barnant	G	eoPump [S	Submersible	Othe	r:			Conver	2° ID	ors 4° ID	6* ID
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	r.		gal / ft. of water	0.041	0.163	0.653	1,469
Sampling Method:	Barnant		GeoPump	S	ubmersible	Othe	r.		1 gal = 3.		85 ml = 0.1		
Duration of Pumping:	(min)	75							Unit Sta	hility WIT	TH TURBI	DITY	< NTII
Average Pumping Rate:	(ml/min)	100	W	/ater-Qualit	y Meter Type	YSI-	556 & Ha 2100P	ach .	pH	DO	Cond.	-	ORP
Total Volume Removed:	(gal)	1.98		D	id well go dry	: Yes	No	7	∀ 0.1	∀ 10%	∀ 3.0%	6 V	10 mV
	(3)												
Time:	1005	1010	1015	1020	1025	1030	1035	1040	9	1	10	11	12
Volume Purged (L)	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50				\$ £.	/
Rate (mL/min)	100	100	100	100	100	100	100	100				1	
Depth to Water (ft.)	10.14	10.14	10.14	10.14	10.14	10.14	10.14	10.14			1		
pH	6.82	6.93	7.05	714	7.19	7.24	7.25	7.26	11111111	1. /	THE STATE OF THE S		
Temp. (C)	9.21	9.22	9.27	934	9.44	9.64	9.65	9.85		1			
Conductivity (mS/cm)	1.003	1.000	1.006	1.001	1.001	1.000	1.001	0.999	1.	X	1		
Dissolved Oxygen	0.58	0.48	0.57	0.46	0.38	0.31	0.32	0.29		/			- 100
ORP (mV)	-723	-79.8	-86.5	-93.9	-98.7	-104.6		- 107.3	1	1			
Turbidity (NTU)	10.1	5.36	2.73	2.56	2.32	1.53	1,43	1.76	/				
Notes:	10	0.00		5.00	1		11.5		1				-
	1			ſ	Anal	veee	# of	Δ.	nalvese		#	of	
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	Contai	ners	nalyses		C	onta	iners
Initial Purge: CLEAR,	NO 00	OR.			TOCs (40 ml with l	H ₂ SO ₄)	2	All	nloride, Sulfa kalinity. 50 ml)	ate, &	1		
Final Purge: CLEAR,		TSS (I L Poly)		.1.		otal Metals 50 ml with h	INO ₃)	1					
Well Integrity Information		PCBs (Total (Amber))	2		50 ml)		1					
Surface Seal Condition (co	5000	INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTALS											
Locking Protective Well C	ap/expansion	plug: G	000		Sample ID: 7540008 Sample Time: 1040					3			
Well Lock Present? 455	Lock Cond	ition: Go	OD		MS/MSD:	Yes	100	Duplic	Sales In the Sales	Yes	May .		
Other:				~	Duplicate ID: PA Dup. Time: NA								
OVERSIGHT SAMPLE	ID:		TIME	:									
NIA			1 /A	1	All samples submitted under COC to TAL of South Burlington, Vermont.								

GROUNDWATER SAMPLING LOG

Sampling Personnel:	A.O.V						Well ID: M		~				
Client / Job Number: Weather: 53° C		7.0000 Tas	sk 00500				Date: 4	-16-0 000	Time (Dut- /	230		-
Well Information	ear						inne ii. (000	Time (Jut. /	250		
Depth to Water:	(feet)	1.91	MARK TO	(TIC)		Well Type:			Flushmou	nt 🗆	Stick	Up	1
Total Depth:	(feet)	5.89		(TIC)	M. Variable	Well Mater	rial:	Si	ainless Ste	el $\sqrt{}$	Р	vc	
Length of Water Column:	(feet)	5.98			_	Well Locke	ed:		Y	es , 🔽		No	0
Volume of Water in Well:	(gal)	97				Measuring	Point Marke	ed:	Ye	es 🗆		No	V
Three Well Volumes:	(gal)	2.92			-	Well Diam	eter:	1*		2" √	Other:		
Purging Information													
Purging Method: (Peristaltic Pump)	Barnant [] Ge	eoPump	S	ubmersible	Othe	r.				ion Factor	-	
Tubing Material:	Silicone	☐ Po	lyethylene	П	Teflon	Othe	г.		gal / ft. of water	1" ID		ID	6° ID
Sampling Method:	Barnant	П	GeoPump	√ s	ubmersible	☐ Othe	г.			785 1 = 378	0.163 0.133 5 ml = 0.133	653 87 cut	1.469
Duration of Pumping:	(min)	135		13					i gai = 3.	703 L =370	3 1111 - 0.130	, cui	NC ICCC
						YSI-	556 & Ha	ich			H TURBIDI	_	
Average Pumping Rate:	(ml/min)	100		ater-Qualit	y Meter Type	•	2100P		pH	DO ∀ 10%	Cond:	-	ORP
Total Volume Removed:	(gal)	3.56	,	D	id well go dry	: Yes	No	2	∀ 0.1	V 10%	∀ 3.0%	V	10 mV
	. 1	2	3	4	5	6	7	8	9	10) 1	1	12
Time:	1015	1020	1025	1030	1035	1040	1045	1050	1055	1100	3		
Volume Purged (L)	11	1.5	2	2.5	3	35	4	4.5	5	5.5	-	545	
Rate (mL/min)	100	100	100	100	100	100	100	100	100	100			
Depth to Water (ft.)	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.92	5	-	
pH	7.13	7.18	7.17	7.17	7.16	7.17	7.19	7.17	7.19	7.17		I	
Temp. (C)	10.52	10.45	10.56	10.61	10.65	10.73	10.77	10.79	10.82	10.80	Y		
Conductivity (mS/cm)	1.004	.990	,982	,979	.975	,974	.973	,972	.971	970			
Dissolved Oxygen	139	,30	.31	,34	,28	.24	,22	,23	,18	121			
ORP (mV)	-24.6	-25.8	-98.8	-102.6	-96.8	-89,4	-85,5	-92.9	-100.7	-100:	7		
Turbidity (NTU)	20.2	14.12	8.22	7.16	5.06	4.25	3.47	2.98	2.35	1.84			
Notes:												1	
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anai	yses	# of Contain	ners Ar	nalyses		# o Co		ners
Initial Purge: C\ Lar w				dor	TOCs (40 ml with	H ₂ SO ₄)	6	All	loride, Sulfa alinity. 50 ml)	ate, &	3		
Final Purge: Clear	/no 0	dor			TSS (I L Poly)		3	To	tal Metals 0 ml with H	NO ₂)	3		
Well Integrity Informatio					PCBs (Total (Amber))	lo	TO	SICILIA SILVERNI	NO3)	3		
Surface Seal Condition (con	ncrete pad, b	olts, manho	2000		INC				UNT TOT				
Locking Protective Well Ca	np/expansion	plug: QO	od '		INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTALS								
Well Lock Present? Yes	Lock Cond	ition: 900	od		Sample ID: T540013 Sample Time: 100								
Other:				11.00	Duplicate ID):	_		Dur	o. Time:			
OVERSIGHT SAMPLE	D:		TIME		Sampled By			I lon P	eviewed By				
Pumpon 100	05					4.0.1	Veil						
Pump off 12	20				All samples	submitted u	nder COC to	AL of Soi	ath Burlingto	on, Vermor	nt.		

GROUNDWATER SAMPLING LOG

Sampling Personnel:	H.ON							1W-1				
Client / Job Number:	B006453	7.0000 Tas	sk 00500					-15-0		1.		
Weather: 62° C.	ear						Time In: /	225	Time C	out: 1	115	
Depth to Water.	(feet)	0.30		(TIC)		Well Type:			Flushmou	nt 🛘	Stick-Up	1
Total Depth:	(feet)	4.70		(TIC)		Well Mater				1		
Length of Water Column:	(feet)	4.4		(110)	-	Well Locke		51	ainless Stee		PVC	
Volume of Water in Well:	(gal)	71						- 4.	Ye		No	
Three Well Volumes:		7.15					Point Mark		Ye	1	No	<u>V</u>
Purging Information						Well Diam	eter:	1*		2" 1	Other:	
Purging Method: (Peristaltic Pump)	Barnant	¬ G€	eoPump	1 5	Submersible	Othe	г.			Conversion	on Factors	
Tubing Material:	Silicone	Po	lyethylene	П	Teflon	Othe	г.		gal / ft. of water		2" ID 4" ID	6" ID
Sampling Method:	Barnant		GeoPump		Submersible	Othe					0.163 0.653	1.469
Duration of Pumping:		aE		<u>M</u>			·		1 gal = 3.7	/85 L =3/85	i ml = 0.1337 cu	ibic feet
	(min)	12				YSI-	556 & Ha	ich *	Unit Stab	ility, WITH	TURBIDITY -	<5 NTU
Average Pumping Rate:	(ml/min)	100	W	/ater-Qualit	ty Meter Type		2100P		pH	DO	Cond.	ORP
Total Volume Removed:	(gal)	2.50)	D	id well go dry	: Yes	No)	∀ 0.1	∀ 10%	∀ 3.0% ∀	10 mV
	1 1	2	3	4	5.	6	7	8	9	10	11	12
Time:	1245	1250	1255	1300	1305	1310	1315	1320	1325	1330	1335	
Volume Purged (L)	1	1.5	2	2.5	3	3.5	4	4.5	1.5	55	6	
Rate (mL/min)	100	100	100	100	100	100	100	100	100	100	100	- 1
Depth to Water (ft.)	10.32	10.32	10.32	100		10.32	10.32	10.32	10.32	10.30		
pH	7.06	7.07	712	7.18	717	717	7.17	7.23	7.25	7.26	7.28	
Temp. (C)	10-11	10.38	10.75	10.85	5 10.57	10.47	10.49	10.42	10.52	10.47		-
Conductivity (mS/cm)	1.258	1.21.4	1.254	1.238		1.193	1.174	1.161	1.144	1.140		
Dissolved Oxygen	.48	.19	.18	,23	120	.10	.12	.10	.07	.07	.06	
ORP (mV)	-31.9	-384	-57.3	-19.3		-75.7	-78.4	-83.8	-87.7	-88.3	-88.3	
Turbidity (NTU)	57.0	39.7	23.2	15.2	1	6.81	4.74	3.62	2.75	194	1.22	
Notes:	31.0	21.7	00.00	10.0	1111	4.01	1.61	3.00	- 0x · 13	1.17	1.00	
				<u> </u>			4 -5				# - 5	
Purge Water Description	(Color? Ode	or? Turbid	? Other?)		Anal	yses	# of Contai	ners Ar	alyses		# of Contai	iners
nitial Purge: Cl Lar	Ino:	odor			TOCs (40 ml with l	H ₂ SO ₄)	2	Alk	loride, Sulfa	te, &	1	
inal Purge: Clear					TSS (I L Poly)		1	To	i0 ml) tal Metals i0 ml with Hl	NO ₂)	1	19.
Vell Integrity Informatio	<u>n</u>				PCBs (Total (Amber))	2	TD	s		1	
urface Seal Condition (cor	ncrete pad, b	olts, manho	le cover): C	book	(Amber)	INC		RSIGHT SPI	IT IN AMO	UNT TOTA	18	
ocking Protective Well Ca)				COLOTTI OF	ar in Amo			
Vell Lock Present? Y25		2			Sample ID:	TS4	0011	Duplic		ple Time:	1335	
Other:		900	-4		MS/MSD:		(1.0)	Dupito			9	
OVERSIGHT SAMPLE I	D:		TIME		Duplicate ID			LogB		. Time:		
Pump on 12					Sampled By	A.O.V			eviewed By:			
D	114				All samples	submitted ur	nder COC to	TAL of Sou	th Burlingto	n, Vermont	t.	

GROUNDWATER SAMPLING LOG

Sampling Personnel:		Jeil					Well ID:		0				
Client / Job Number:	11	7.0000 Tas	sk 00500				Part of the second	-15-0		Outs 1	220		
Weather: 55° p	earthy c	lovay					ime In:	110	Time	out: /	220		
Depth to Water:	(feet)	8.84		(TIC)		Well Type:	Maria		Flushmou	ınt 🗆	s	tick-Up	1
Total Depth:	(feet)	8.53		(TIC)		Well Mater	ial:		Stainless Ste	el V		PVC	
Length of Water Column:	(feet)	9.69				Well Locke	ed:	35.1	Y	es . 🗹		No	
Volume of Water in Well:	(gal)	1,57			_	Measuring	Point Mark	ed:	Y	es 🗇		No	V
Three Well Volumes:	(gal)	4.73			-	Well Diame	eter:	1*	0	2° V	Other:		
Purging Information					•			4					
Purging Method:	Barnant	☐ Ge	eoPump	V 8	Submersible	Other	r.			Conver	sion Fac	tors	
(Peristaltic Pump) Tubing Material:	Silicone	☐ Po	iyethylene	<u></u>	Teflon	Other			gal / ft. of water	1" ID	. 2" ID	4° ID	6° ID
Sampling Method:	Barnant	П	GeoPump	₽⁄ s	ubmersible	☐ Other				0.041 .785 L =37	0.163	0.653	1.469
	(min)	1		<u> </u>					1 yai - 3	.765 L =37	05 1111 = 0	. 1337 C	ibic leet
Duration of Pumping:	(min)	65				YSL	556 & Ha	ach	Unit Sta	bility, WI	TH TURE	SIDITY	<5 NTU
Average Pumping Rate:	(ml/min)	100	N	/ater-Qualit	ty Meter Type		2100P		pH	DO	Cond	-	ORP
Total Volume Removed:	(gal)	1.71		D	id well go dry	: Yes	No	C	∀ 0.1	∀ 10%	∀ 3.0)% \	/ 10 mV
	1 4	2	3	4	5	6	7	1 8	9		10	11	12
Time:	1125	1136	1135	1140		1150			9			11	. 12
Volume Purged (L)	1	1.5	2	2.5	3	3.5			1 : 103			31,	
Rate (mL/min)	100	100	100	100	1.	100							
Depth to Water (ft.)	8.85	8.86	8.86	8.86		8.86			i encel				
pH	7.18	7.21	7.21	7.21	7.20	7.20		- 4,					
Temp. (C)	11.90	11.88	11.88	1).72	1199	12.32		Till.		1			
Conductivity (mS/cm)	995	,996	995	995	1993	,992							
Dissolved Oxygen ms	175	.45	,28	,23	1.21	19							
ORP (mV)	-90.8		-95.8	-97.6		-96.4		1					
Turbidity (NTU)	9.11	8.51	7.43	4.98		3.20							
Notes:		0.0				00							-
				1			# of					# of	
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	Contai	ners A	Inalyses			Conta	iners
Initial Purge: Clear					TOCs (40 ml with I	H₂SO₄)	2	A	Chloride, Sulf	ate, &		1	
Final Purge: Clear					TSS (I L Poly)		1	T	250 ml) otal Metals 250 ml with l	(NO ₂)		1	
Well Integrity Information	1				PCBs (Total (Amber)	i)	7	Т	DS 250 ml)			1	
Surface Seal Condition (cor	ncrete pad, b	olts, manho	le cover): 6	1000	(Amber)	INCI	UDE OVE		PLIT IN AMO	OUNT TO	TALS	1	
Locking Protective Well Ca	p/expansion	plug: 90	od ·		Comple ID								
Well Lock Present? yes	Lock Cond	ition: 90	od		Sample ID: MS/MSD:	7 54 Yes	000		icate:	mple Time Yes	e: / (?	50	
Other:		J	5	1 may	Duplicate ID)-			Du	p. Time:			
OVERSIGHT SAMPLE I	D:		TIME		Sampled By			Log	Reviewed By		-		
Pump on 1115	5					H. O.V	lei				ant.		
0 10	20				All samples	submitted ur	ider COC to	DIAL OF S	outn Burlingt	on, vermo	ont.		

GROUNDWATER SAMPLING LOG

Client / Job Number:		7.0000 Tas	k 00500					- 17-	0_1_				
Weather: 620 C	lear						Time In:	025	Time	Out:	55		
Depth to Water:	(feet)	3.81		(TIC)		Well Type	5 = 100	14. (6.1)	Flushmou	ant 🗆	Stir	k-Up	1
Total Depth:	(feet)	9.49		(TIC)		Well Mate			Stainless Ste	1	Olic	PVC	n
Length of Water Column:	(feet)	5.68				Well Lock	ed:	179		es , 🗸		No	
Volume of Water in Well:	(gal)	925					Point Marke	ed:		es D		No	~
Three Well Volumes:	(gal)	2.77				Well Diam		1*		2° V	Other:	NO	
Purging Information								•					
Purging Method: (Peristaltic Pump)	Barnant	Ge	eoPump	√ s	ubmersible	Othe	r:			Conver	sion Facto	ors	
Tubing Material:	Silicone	Po Po	lyethylene	П	Teflon	Othe	г.		gal / ft. of water	1° ID	2" ID	4° ID	6" ID
Sampling Method:	Barnant		GeoPump	√ S	ubmersible	Othe	 г.		-	785 1 = 37	0.163 85 ml = 0.1	0.653	1.469
Duration of Pumping:	(min)	75							1 gai = 0.	.700 L -07	00 1111 - 0.1		ibio rect
			14	Inter Ovelit	Motor Time	YSI	556 & Ha	ich	-		TH TURBI	DITY	
Average Pumping Rate:	(ml/min)	100	VV	rater-Qualit	y Meter Type	•	2100P		pH ∀ 0.1	DO ∀ 10%	Cond. ∀ 3.0%	+	ORP 10 mV
Total Volume Removed:	(gal)	1.98	1 2 10 10	D	d well go dry	: Yes	No)	V 0.1	V 10%	V 3.0%	9 1 0	101110
	1 1	2	3	4	5	6	7	8	9	. 1	10	11	1.
Time:	1040	1045	1050	1055	1100	1105	1110	1115	-				
Volume Purged (L)	1	1.5	Z	2.5	3	3.5	4	4.5	0.7			艺··	
Rate (mL/min)	100	100	100	100	100	100	100	100					
Depth to Water (ft.)	13.83	13.83	13.83	13.83	13.83	13.83	13.83	13.83	>				
ρH	7.14	7.22	7.27	7.30	7.32	7.28	7.28	7.27					
Temp. (C)	10.08	10.28	10.35	10.26	10.14	10.31	10.32	10.25					
Conductivity (mS/cm)	1820	.869	,877	.875	1.875	.873	.875	.875					
Dissolved Oxygen	,69	.38	.32	,31	1.33	,31	.30	,28					
ORP (mV)	-13.5	-40.9	-51.7	-55.0	1-56.1	-50.9	-56.6	-64.6					
Turbidity (NTU)	9.13	9.12	7.91	6.02	5.02	4.41	3.36	2.99					
Notes:													
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	# of Contain	ners A	nalyses			of onta	iners
Initial Purge: Clea			\$150034561E422		TOCs (40 ml with l	H₂SO₄)	2	A	hloride, Sulfa kalinity. 50 ml)	ate, &		1	
Final Purge:					TSS (I L Poly)		1	To	otal Metals 50 ml with I-	INO.)		1	
Well Integrity Informatio	<u>n</u>				PCBs (Total (Amber))	2	Т	DS (50 ml)		1		1995
Surface Seal Condition (co	ncrete pad, b	olts, manho	le cover): ¿	good	(Amber)	INC	LUDE OVER			OUNT TO	TALS		
Locking Protective Well Ca	ap/expansion	plug: QO	od		Sample ID:					mple Time		-	
Well Lock Present? 725	Lock Cond	ition: 00	od		MS/MSD:	Yes	10011	<i>Q</i> Dupli		Yes	: 111	2	
Other:		7			Duplicate ID):			Dire	p. Time:			
OVERSIGHT SAMPLE			TIME:		Sampled By	: A .		Log F	Reviewed By				
Pump on 10					All samples	A.01					ont.		
Pump off 11	45					ADIS						_	l of

GROUNDWATER SAMPLING LOG

Sampling Personnel:	1. DNO	Contract of the last of the la	-k 00500					1W-1					
Client / Job Number: Weather: 35° V	1006453	7.0000 Tas	SK 00500				Date: 4	300	Time	Out: 14	35		
Well Information	LLVI						Time iii.	300	- Timile	out. 1-	00		
Depth to Water:	(feet)	7.64		(TIC)		Well Type			Flushmou	int 🗆	St	tick-Up	V
Total Depth:		2.45		(TIC)		Well Mate	rial:	S	tainless Ste	-1		PVC	П
Length of Water Column:	(feet)	4.81				Well Lock	ed:			es · 🗹	,	No	
Volume of Water in Well:	(gal)	78					Point Mark	ed:		es D		No	157
Three Well Volumes:	(gal)	2.35				Well Diam				1	Other:	NO	
Purging Information						TYCH Didir	icioi.	1"	Ц	2° V	Outer.		
Purging Method: (Peristaltic Pump)	Barnant] Ge	eoPump	y s	ubmersible	Othe	er.			T	sion Fac		1
Tubing Material:	Silicone	□ Ро	lyethylene		Teflon	Othe	r		gal / ft. of water	1° ID	2" ID 0.163	4" ID 0.653	6" ID
Sampling Method:	Barnant	П	GeoPump	N Su	ubmersible	Othe	er.			785 L =37	اسبا		1.469 ubic feet
Duration of Pumping:	(min)	P105	85									17	
Average Pumping Bate:				later Qualit	Meter Type	YSI-	-556 & Ha	ach .		bility, WI	T	-	
Average Pumping Rate:	(ml/min)	100	1115a	rater-Quality	y Weter Type	•	2100P		pH ∀ 0,1	DO ∀ 10%	Cond ∀ 3.0		ORP 10 mV
Total Volume Removed:	(gal)	2.24		Di	d well go dry	: Yes	(No	2_	V 0.1	V 10%	V 3.0	% V	10 mV
	T 1	2	3	4	5	6	7	8	9	Τ.	10	11	1:
Time:	1315	1320	1325	1330	1335	1340	1345	1350					
Volume Purged (L)	1	15	2	2.5	3	3.5	U	4.5		1310		35	
Rate (mL/min)	100	100	100	100	100	100	100	100					
Depth to Water (ft.)	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65					
pH	7.14	7.13	7.13	7.13	7.13	7.12	7.13	7.13					
Temp. (C)	7.49	7.57	7.62	7.61	7.65	771	773	7.71					
Conductivity (mS/cm)	1.203	1.206	1.208	1.210	1.210	1.211	1.213	1.214					
Dissolved Oxygen mg	1.41	.93	,66	.57	,45	.36	.32	.30					
ORP (mV)	-77.4	-81.8	-81.9	-85.3	The state of the s	-71.6	-72.1	-73.9	2.1				
Turbidity (NTU)	8.07	6.14	4.49	3.61	2.42	2.44	191	1.64					-
Notes:	0.01	0.17	1.71	0.01	4.12	Q. 1-1	1.11	1.10					-
				Г.	1			1					
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	# of Contai	ners Ar	nalyses		100000000000000000000000000000000000000	# of Conta	iners
nitial Purge: Clear			: Other:)		TOCs	1.50.)	2	Ch	loride, Sulfa	ate, &		1	
inal Purge:	,,,,,				(40 ml with l	12304)	٥٧.	To	tal Metals			'	
Vell Integrity Informatio	n				(I L Poly) PCBs (Total)		TD	60 ml with F	INO ₃)		/	
urface Seal Condition (co	ncrete pad, b	olts, manho	le cover): 6	Rood	(Amber)		2		50 ml)			(
ocking Protective Well C			, -	-		INC	LUDE OVE	RSIGHT SP	LIT IN AMO	UNT TO	TALS		
)			Sample ID:					mple Time	1	350)
Well Lock Present? YES	LOCK COM	don go	od		MS/MSD:	Yes	(No)	Duplic	ate:	Yes	(No.)		
Other:					Duplicate ID	-	- 4		Duj	o. Time:	-		
OVERSIGHT SAMPLE	D:		TIME		Sampled By	A N'A	Joil	Log R	eviewed By	:			
Pump on 131	120				All samples	submitted u	nder COC to	TAL of Sou	uth Burlingto	on, Vermo	ont.		

GROUNDWATER SAMPLING LOG

Sampling Personnel:	1. D'Ne						Well ID:		_				
Client / Job Number:		7.0000 Tas	sk 00500				Ducc.	- 14 -0		- 1	-		
Weather: 38° Y	ain						Time In: /	000	Time	Out: /	200)	
Depth to Water:	(feet)	6.82		(TIC)	-	Well Type			Flushmo	unt 🛮	5	Stick-Up	1
Total Depth:		2.92		(TIC)		Well Mate	rial;	S	tainless Ste	.1		PVC	T .
Length of Water Column:		6.1				Well Lock	ed:			res , 🛚	,	No	
Volume of Water in Well:	(gal)	994					Point Mark	ed:					
Three Well Volumes:	(gal)	2.98				Well Diam				1	Other:	No	
Purging Information						Trea Blan			П	2" V	- Caron		
Purging Method: (Peristaltic Pump)	Barnant	G	eoPump [1	Submersible	Othe	r.			T 1	sion Fac	T	
Tubing Material:	Silicone	Po Po	lyethylene	П	Teflon	V Othe	ır.		gal / ft. of water	1" ID	2" ID	4* ID	6" ID
Sampling Method:	Barnant	П	GeoPump	M S	Submersible	Othe	г.			0.041 .785 L =37	0.163 85 ml = 0	0.653 0.1337 cu	1.469
Duration of Pumping:	(min)	105										.,,	, 467 , 467
Average Pumping Rate:	(ml/min)		V	/ater-Quali	ty Meter Type	YSI-	556 & Ha	ich	pH pH	bility, WI	Con		ORP
							2100P		∀ 0.1	∀ 10%	∀ 3.0		10 mV
Total Volume Removed:	(gal)	2.77			oid well go dry	: Yes	(No						
	. 1	2	3	4	5	6	7	8	9	1 1	10	11	. 12
Time:	1020	1025	1030	1035	1040	1045	1050	1055				6	
Volume Purged (L)	1	1.5	2	2.5	3	35	4	4.5	: 92			55.	
Rate (mL/min)	100	100	100	100	100	100	100	100					
Depth to Water (ft.)	6.84	6.84	6.84	6.84	6.84	10.84	6.84	6.84					
pH	7.35	7.32	7.33	7.33	7.33	7.33	7.34	7.33					
Temp. (C)	7.12	7.13	7.16	7.13	7.24	7.26	7.26	7.30					
Conductivity (mS/cm)	.995	,950	,936	934	,931	930	1929	,928					
Dissolved Oxygen M9	,99	.63	.42	.43	.39	,40	,36	,32					
ORP (mV)	-100.9	-112.6	-115.7	-96.1	-866	-108.9	-1017	-99.2					
Turbidity (NTU)	17.5	12.21	8.44	6.16		4.28	3.04	1.97					
Notes:													-
							# of					# of	
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anai	yses	Contai	ners Ar	nalyses			Contai	ners
Initial Purge: Clear	w/ orar	ex fle	paties	noodor	TOCs (40 ml with	H ₂ SO ₄)	AOJ L	All	iloride, Sulf kalinity. 50 ml)	fate, &		1	
Final Purge: Clear					TSS (I L Poly)		2	To	tal Metals 50 ml with l	HNO ₂)	-	1	-
Well Integrity Informatio	Δ				PCBs (Total (Amber))	AO L	1 TC		11103)	-	1	
Surface Seal Condition (con	ncrete pad, b	olts, manho	le cover): (Road	(Alliber)		LUDE OVER			DUNT TO	TALS		
Locking Protective Well Ca					Comple ID								
Well Lock Present? 405					Sample ID: MS/MSD:	7540 Yes	(No)	Duplic		mple Time	No No	55	
Other:)				+ + 1	2002		Dir	p. Time:		7 4	
OVERSIGHT SAMPLE			TIME		Duplicate ID Sampled By	: , ,	0003		eviewed B		113	00	
Pump of 11	10				A. D	Neil	nder COC to				ont		
rump off 11	155				All samples	Saomineu u	ilder GOC (C	7 1AL 01 301	Grangt	on, venno	ARL.		

GROUNDWATER SAMPLING LOG

Sampling Personnel:	1. D'Ne						Well ID:	1W-11	_				
Client / Job Number:		7.0000 Tas	k 00500				Date: 4	-14-0	9				
Weather: 38° Y	ain						Time In: /	000	Time	Out: /	200)	
	(foot)	6.82		CTIC:	_	Well Type	r		Fluobmou	ınt 🗆	-	tial: Un	1
Depth to Water: Total Depth:	(feet)	2.92		(TIC)	_	Well Mate			Flushmou	.1	5	tick-Up	<u></u>
Length of Water Column:		6.1		(ric)	-			S	tainless Ste		,	PVC	
Volume of Water in Well:		994	Telan.		_	Well Lock			Y	es . 🗹		No	
Three Well Volumes:	(gal)	2.98					Point Mark	ed:		es 🗆		No	
						Well Diam	neter.	1*		2" √	Other:		
Purging Information													
Purging Method: (Peristaltic Pump)	Barnant] Ge	eoPump [1	Submersible	Othe	er.			1" ID	sion Fac	tors 4° ID	6" ID
Tubing Material:	Silicone	Po	lyethylene		Teflon	Othe	er.		gal / ft. of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant		GeoPump	M S	Submersible	Othe	er.		1 gal = 3.	.785 L =37	85 ml = 0	.1337 a	ubic feet
Duration of Pumping:	(min)	105							Unit Sta	bility, WI	TU TI IDE	NOITY.	CE NTU
Average Pumping Rate:	(ml/min	100	N	/ater-Quali	ty Meter Type	YSI-	-556 & Ha	ch	pH pH	DO DO	Cond		ORP
		100					2100P		∀ 0.1	∀ 10%	∀ 3.0		10 mV
Total Volume Removed:	(gal)	2.77	3 - 1		Did well go dry	Yes	No)		7 1070	1 0.0	70 1 4	101111
	. 1	2	3	1 4	5	6	7	8	9	T. 1	0	11	12
Time:	1020	1025	1030	1035	1040	1045	1050	1055					
Volume Purged (L)	1	1.5	2	2.5	3	3.5	4	4.5	1 427			35,	
Rate (mL/min)	100	100	100	100	100	100	100	100		1 1 8			
Depth to Water (fl.)	6.84	6.84	6.84	6.84		10.84	6.84	6.84		1.			
рН	7.35	732	1.33	7.33		7.33	734	7.33					
Temp. (C)	7.12	7.13	7.16	7.13	7.24	7.26	7.26	7.30					
Conductivity (mS/cm)	1995	, 950	,936	934	,931	930	1929	,928		+	-		
Dissolved Oxygen Mg	,99	,63	APPENDING SECTION	. 43	39	,40					-		
ORP (mV)			.42				,36	,32	1		-		
Turbidity (NTU)	-100.9	-112.6	-115.7	-96.1		-1089		-99.2		+	-		
Notes:	17.5	12.21	8.44	6.16	5.44	4.28	3.04	1.97			-		
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	# of Contain	ners Ar	nalyses			# of Contai	iners
Initial Purge: Clear		•		no	TOCs (40 ml with)	1.60.)	4°2 L		loride, Sulfa kalinity.	ate, &		7	
Final Purge: Clear				OCIOI	TSS	12504)	2	To	tal Metals		-	7	
Well Integrity Informatio					(I L Poly) PCBs (Total)	AO	, ,	50 ml with H	INO ₃)			
Surface Seal Condition (co		olts, manho	e cover).	has	(Amber)				50 ml)		J		
Locking Protective Well Ca				jac		INC	LUDE OVER	RSIGHT SP	LIT IN AMO	OUNT TO	TALS		
Well Lock Present? 405					Sample ID:		1-1			mple Time	10	55	
Other:	, Losk Colla	900	u		MS/MSD:	Yes	(No)	Duplic	ate: (Yes	No		
OVERSIGHT SAMPLE	m.		TOLD		Duplicate ID	T54	0003			p. Time:	113	0	
•			TIME		Sampled By	Meil		Log R	eviewed By	r.			
Pump off 1	155				All samples	submitted u	nder COC to	TAL of Sou	uth Burlingto	on, Vermo	ont.		

GROUNDWATER SAMPLING LOG

Sampling Personnel: /	4.0.N						Well ID:			ne i			
Client / Job Number:	THE RESIDENCE OF THE PARTY OF T	7.0000 Ta	sk 00500					-13-			11 50		
Weather: 45° 0	verca	55					Time In:	1510) Tin	ne Out:	1650		
Depth to Water:	(feet) S	3.59		(TIC)		Well Type	: 4,44		Flushr	nount [Sti	ck-Up	
Total Depth:		2.00		(TIC)		Weil Mate	rial:		Stainless	Steel V		PVC	
Length of Water Column:	(feet)	3.41			_	Well Lock	ed:			Yes . V	/	No	
Volume of Water in Well:	(gal)	, 55				Measuring	Point Mark	ed:		Yes [No	
Three Well Volumes:	(gal)	.10			_	Well Diam	eter.	1	. []	2° V	Other:	110	
Purging Information								-					
Purging Method: (Peristaltic Pump)	Barnant] G	eoPump	7	Submersible	Othe	er:			Conv	ersion Fact	ors	
Tubing Material:	Silicone	Po	olyethylene		Teflon	Othe	er.		gal / f	or	2° ID	4" ID	6° ID
Sampling Method:	Barnant		GeoPump	V S	ubmersible	Othe	er:		-	0.041	0.163 3785 ml = 0.1	0.653 337 a	1.469 ubic feet
Duration of Pumping:	(min)	85				FILE						17	- 4
Average Pumping Rate:	(ml/min)		v	Vater-Quali	ty Meter Type	YSI-	556 & Ha	ach	Unit 9	Stability, V	VITH TURBI	-	<5 NTU ORP
Total Volume Removed:	(gal)	2.24			oid well go dry	r: Yes	2100P	7	∀ 0.1	∀ 10%	6 ∀ 3.0%	6 7	/ 10 mV
								_	<u> </u>		40.1		
	1530	1535	1000	16116		م سرسرا	7		8	9	10	11	1
Volume Purged (L)	1330	1.5	1540	1545	1550	1555	1600	14.10		67		(B) (E)	-
Rate (mL/min)	100		2	2.5		3.5	100		+				-
Depth to Water (ft.)	8.66	8.66	8.67	100	8.67	100	100			+		-	
pH	6.71	6.81	6.87	8.67		8.67	6.87	- A		-			
Temp. (C)	6.82	6.81	6.75	6.86	6.85	6.88	6.91						
Conductivity (mS/cm)	,895	, 888	,883	.880		876	,875						
Dissolved Oxygen ms	5.69	2.44	1.78	1.69		1.51	1.50						
ORP (mV)	79.7	70	76.8	79.5	81.3	83.6	87.6		-				
Turbidity (NTU)	1.77	19.0	,65	.62									
Notes:	1.11	1.15	.65	. 62	1.60	-64 tur	1.602 10.48 W	, Cl.	- 6.11			-	
			<u> </u>			10.	<u> </u>	10 TIO	open				
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	# of Contai	ners	Analyses			of onta	iners
Initial Purge: Clear					TOCs (40 ml with	H₂SO₄)	2		Chloride, S Alkalinity. (250 ml)	ulfate, &		1	
Final Purge: Clear	, no	odor			TSS (I L Poly)		. 1		Total Meta (250 ml wit			1	
Well Integrity Information	<u>on</u>				PCBs (Total (Amber))	2		TDS (250 ml)			1	
Surface Seal Condition (co	ncrete pad, b	olts, manho	le cover): O	good	(Alliner)	INC	LUDE OVE			MOUNT TO	OTAL S		
ocking Protective Well C			1 -										
Well Lock Present? Yes	Lock Cond	ition: 900	d		Sample ID: MS/MSD:	T S Yes	100	The state of the s	olicate:	Sample Tir Yes	(No)	00	
Other:													
OVERSIGHT SAMPLE	ID:		TIME		Duplicate ID			1100	Reviewed	Dup. Time:			
ump on 15	20		- 11		A. C	Neil	-4000:						
ump off 16	45				All samples	submitted ui	naer COC to	IAL of S	outh Burli	igton, Vern	nont.		

GROUNDWATER SAMPLING LOG

Sampling Personnel:		AGEN						W-13	3			
Client / Job Number:		7.0000 Tas					• 1	14/09				
Weather: 15, 60	ERCAST/	LT RAIN	1 45	wino.			Time In: [C	20	Time C	Out: +	- 121	15
Depth to Water:	(feet)	8.39	8	(TIC)		Well Type			Flushmou	nt 🗆	Stick-l	Jp √
Total Depth:	(feet)	15.00)	(TIC)		Well Mate	rial:		Stainless Stee	el V	PV	/c 🗆
Length of Water Column:	(feet)	6.67				Well Locks	ed:		Ye	0/	/	No 🖸
Volume of Water in Well:	(gal)	1.00	1		THE .	Measuring	Point Marke	ed:		0/		
Three Well Volumes:	(gal)	3.2	7			Well Diam			Ye	1	Other:	No L
Purging Information	PUMP	on O	1055	i of	FO 17	230	eter.	1*		2* V	Other.	
Purging Method: (Peristaltic Pump)	Barnant	Ge	eoPump		Submersible	Othe	r.			F	on Factors	1
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	r.		gal / ft. of water	1° ID 0.041	2° ID 4° 0.163 0.6	
Sampling Method:	Barnant		GeoPump	Ø S	ubmersible	Othe	r.		1 gal = 3.7		5 mi = 0.1337	
Duration of Pumping:	(min)	95										
Average Pumping Rate:	(ml/min)	100	,	Nater Oualit	ty Meter Type	YSI-	556 & Ha	ich	-		1 TURBIDIT	
Average r uniping reate.	(memm)	100		vater-Quain	ty wieter Type	* 4 998	2100P		pH ∀ 0.1	DO ∀ 10%	Cond: ∀ 3.0%	ORP
Total Volume Removed:	(gat)	9.5	L	19 PT - D	id well go dry	: Yes	No)	V 0.1	V 10%	V 3.0%	∀ 10 mV
	1	2	3 111 E	4		6	7	_8	9	10		
Time:	1105	1110	1115	1120	1125	1130	1135	1140	1145	1150	2.5	
/olume Purged (L)	1.00	1.50	2.00	2.50		3.50	4.00	4.50	5.00	5.50	6.00	6.50
Rate (mL/min)	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft.)	8.39	8.39	8.39	8.39	8.39	839	8.39	8.39	8.39	8.39	8.39	8.45
H	6.78	6.88	7.05	7.09	17.17	7.18	7.22	7.23	7.25	7.25	7.27	7.29
Temp. (C)	8.40	8.54	8.58	8.51	8.53	8.48	8.44	8.45	8.39	8.26	8.39	839
Conductivity (mS/cm)	1.015	093	0.961	0.961	0.959	0.959	0.959	0.958	0.958	0958	0.958	
Dissolved Oxygen	1.34	0.86	0.56	0.50	0.47	0.47	0.42	0.39	0.39	0.40		
ORP (mV)	-683	-88.6	-	-106.8	-	-113.5	-114.5	-115.4	-115.8	-115.3		-1191
Turbidity (NTU)	34.4	21.4	21.8	22.3	15.0	821	7.22	6.14	531	4.34	4.21	4.74
Notes:	01.1	21.1	21.0	4.	10.0	0.21		Ψ.τ.	1.01	1.21	1,-1	6/1
urge Water Description	(Color? Ode	ar? Turbid	2 Other?)		Anai	yses	# of Contain	ners A	nalyses		# of Con	tainers
					TOCs (40 ml with l	H. 60.)	2	C	hloride, Sulfa kalinity.	ite, &	- 1	
inal Purge: SLIGHTLY	130	71 20	Ouce	•	TSS	112504)	1	To	50 ml) otal Metals	NO.	1	
ell Integrity Informatio		PUC.			(I L Poly) PCBs (Total)	2	TI	50 ml with H	NO3)	,	
urface Seal Condition (con	ncrete pad, b	olts, manho	le cover):/		(Amber)		_		50 ml)		/	
ocking Protective Well Ca				9000		INC	LUDE OVER	RSIGHT SP	LIT IN AMO	UNT TOTA	ALS	
ell Lock Present? 1/25		,			Sample ID:	754000		Dupli		nple Time:	1200	
ther:		Ga	<i>y</i>		MS/MSD:	res	(No.)					
VERSIGHT SAMPLE I	D: 1		TIME	i:	Duplicate ID	-	N/A		Dup Reviewed By:	. Time:	NIA	
	NA			AV	Sampled By	MA	1		uth Burlingto	MAK		

GROUNDWATER SAMPLING LOG

Sampling Personnel: Client / Job Number:	M. KOHAG	たん 7.0000 Tas	k 00500				Well ID: V	W-14 3/09					
Weather: 40° S	OVERCAS		D WIND					505	Time C	Out: 1	203		
Well Information	010-(01)	, , ,	e wine		_								
Depth to Water:	(feet)	6.19		(TIC)		Well Type			Flushmou	nt 🗆	Stic	k-Up	1
Total Depth:	(feet)	11.61		(TIC)		Well Mate	rial:	s	tainless Stee	el V		PVC	
Length of Water Column:	(feet)	5.42				Well Lock	ed:	19.3	Ye	s . D		No	0
Volume of Water in Well:	(gal)	88.0				Measuring	Point Marke	ed:	Ye		-	No	<u> </u>
Three Well Volumes:	(gal)	2.64				Well Diam	eter:	1*		2° √	Other:		
Purging Information	Pump o	n @	1515	OFF (9 1640.	31.2				_ ,		N. I	6
Purging Method: (Peristaltic Pump)	Barnant] Ge	eoPump [s	ubmersible	Othe	r.			Convers	ion Facto	rs 4° ID	6° ID
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	r. ₁ /		gal / ft. of water	0.041		0.653	1.469
Sampling Method:	Barnant		GeoPump	S S	ubmersible	Othe	r F		1 gal = 3.7	785 L =378	5 ml = 0.13	337 ca	ıbic feet
Duration of Pumping:	(min)	85				9-6-8	0.0						
Average Pumping Rate:	(ml/min)	.00	\ v	Vater-Quality	y Meter Type	YSI-	556 & Ha	ich	pH pH	DO DO	H TURBIE	YTIC	ORP
						- 4	2100P		∀ 0.1	∀ 10%	∀ 3.0%	1	10 mV
Total Volume Removed:	-(gal)	8.5 L		Di	id well go dry	: Yes	No)			1	1-	
	1	2	3	4	5	6	7	8	9	1	0	11	. 1
Time:	1525	1530	1535	1540	1545	1550	1555	1600	1605	1610			/
Volume Purged (L)	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	4.50	5.5	0	35	1
Rate (mL/min)	100	100	100	100	100	100	100	100	100	100			1
Depth to Water (ft.)	6.20	7620	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	_		1.
pH	6.89	695	6.96	6.98	1 99	7.00	7.20	7.02	7.04	7.04		0	
Temp. (C)	71.3	7.58	754	751	749	754	756	7.52	7.69	7.78		1	
Conductivity (mS/cm)	0750	0719	0774	0777	A 797	A 790	0.800	0.805	0.808	0.81		1	
Dissolved Oxygen	1.07	0.70	0.90	0.87	0.63	0.56	0.45	0.38	0.000	0.35			
ORP (mV)	-471	-54.5	- 54.6	-54.1	-60.7	-63.9	-69.6	-72.0	-737	-75	1		
Turbidity (NTU)	5.17	717	3.11	2 17	2.30	1.95	1.43	1.18	1.15	0.99			
Notes:	3.11	7.11	0.11	2.61	2.30	1.73	1.73	1.10	1.13	0.1			
		1			Anal	veae	# of	۸۰	nalyses		#	of	
urge Water Description	(Color? Od	or? Turbid	? Other?)		Allei	,303	Contai	ners			C	onta	iners
nitial Purge: CLEAR	, 100 0	DOR.			TOCs (40 ml with l	H ₂ SO ₄)	2	All	nloride, Sulfa kalinity. 50 ml)	ite, &		1	
inal Purge: CLEAR.	NO 0	DOR			TSS (I L Poly)		1	To	tal Metals 50 ml with H	NO ₃)		1	
Vell Integrity Information	<u>on</u>				PCBs (Total (Amber))	2	TE (2)	0S 50 ml)		1		
urface Seal Condition (co	oncrete pad, b	olts, manho	le cover): (2000		INC	LUDE OVER			UNT TOT	ALS		-
ocking Protective Well C	Cap/expansion	plug: Go	OD		Sample ID:	7/11	~~~			nple Time			
Vell Lock Present? VES		ition:	00		MS/MSD:	Yes	0001	Duplio			No 10	ole)
Other:		- Cu			Duplicate ID	: 4	1/4		Dun	. Time:			
VERSIGHT SAMPLE	D;		TIME	: -	Sampled By	. 1	1	Log R	leviewed By:		/		
1	SA		_	- 1	All	MFK	1 2001	TN -60-	uth Burlingto		_		

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GROUNDWATER SAMPLING LOG

Spring 2009 EVENT

Page __ of __

Sampling Personnel:		GEN				1		VIW-13				
Client / Job Number:		7.0000 Tas		140 (40				14/09				
Weather: 40°5, 0	VERCAST	/ RAIN,	LTWI	ND.			Time In:	310	Time (Out:		
Depth to Water:	(feet)	7.10		(TIC)		Well Type:			Flushmou	nt 🗆	Stick-U	lo √
Total Depth:	(feet)	14.49		(TIC)		Well Mater	rial:	Si	tainless Ster	1	PV	
Length of Water Column:	(feet)	7.39				Well Locke	ed:		Ye		- N	
Volume of Water in Well:	(gal)	1.20	Miller				Point Marke	ed:	Ye	0/	N	
Three Well Volumes:	(gal)	3.60				Well Diam		1*		1	Other:	0 0
Purging Information	PUMP	000 B	1320	OF	FOI	508	Olor.			2 1	Julion.	
Purging Method: (Peristaltic Pump)	Barnant	Ge	eoPump	Si	ubmersible	Othe	r:			- T	on Factors	
Tubing Material:	Silicone	☐ - Po	lyethylene	П	Teflon	Othe	r.		gal / ft. of water		2° ID 4° II	
Sampling Method:	Barnant	П	GeoPump	Su	ıbmersible	Othe	_				0.163 0.65	
		Ш		L.		U Oule			1 gal = 3.	/85 L =3/85	ml = 0.1337	cubic feet
Duration of Pumping:	(min)	100				VCI	556 & Ha	ch	Unit Stat	ility, WITH	TURBIDIT	Y <5 NTU
Average Pumping Rate:	(ml/min)	100	W	later-Quality	Meter Type	: 131-	2100P	CII	рН	DO	Cond.	ORP
Total Volume Removed:	(gal)	2.64	1	Die	d well go dry	Yes	No)	∀ 0.1	∀ 10%	∀ 3.0%	∀ 10 mV
	1 1	2	3	4	5	6	7	8	9	10	1 11	12
Time:	1330	1335	1340	1345	1340	1355	1400	1405	1410	1415		
Volume Purged (L)	1.00	1.50	2.00	2.50	3.03	3.50	4.00	4.50	5.00	5.50	1420	The second secon
Rate (mL/min)	100		100	100	100	100	100	100	100	100	100	,
Depth to Water (ft.)	711	711	7.11	7.11	7.11	7.11	7.11	7.11		7.11	100	
pH	7.13	7.13	7.14	7.15	7.15	7.15	7.16	7.17	7.11	7.18	7.18	
Temp. (C)	7.37	7.34	7.38	7.38	7.39	7.46	7.50	7.51	7.53	7.56	7.58	g
Conductivity (mS/cm)	0.773		0.771	0.769	0.769	0.770				The state of the state of		
Dissolved Oxygen		0.771	0.43		0.16		0.770	0.776	0.100	0.780	0.782	-
ORP (mV)	0.67	0.60		0.36	-	0.26	70.24	0.24	0.23	0.24	0.24	
	-64.8	:69.7	16.0	-75.6	-77.3		-79.8	-80.5	-81.9	-81.7	-81.4	-
Turbidity (NTU) Notes:	29.8	23.1	19.6	15.5	13.6	8.88	6.99	5.10	3.82	2.91	2.58	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
Purge Water Description	(Color? Ode	or? Turbid	? Other?)		Anal	yses	# of Contai	ners Ar	nalyses		# of Cont	tainers
nitial Purge: SLIGH	Try CLO	by, re	ODER		TOCs (40 ml with l	H ₂ SO ₄)	2	All	lloride, Sulfa calinity. 50 ml)	ite, &	1	
Final Purge: CLA	R, No	COOK			TSS (I L Poly)		1.	To	tal Metals 50 ml with H	NO ₃)	1	
Well Integrity Informatio					PCBs (Total (Amber))	2	TO			1	
Surface Seal Condition (con	ncrete pad, b	olts, manho	le cover): (5000	(runber)	INC	LUDE OVER	1,101		UNT TOTA	LS	
Locking Protective Well Ca	ap/expansion	plug:	200									
Well Lock Present?		ition:	×0	-	Sample ID: MS/MSD:	TS4C Yes	0006	Duplic		nple Time:	1420	
Other:		J			Duplicate ID);			Dur	. Time:	,	
OVERSIGHT SAMPLE			TIME	1 - 1	Sampled By		MIA	Log R	eviewed By		N/A	
	4/4		2	/A	All samples	submitted u	nder COC to	TAL of Sou	oth Burlingto	n, Vermont		

ARCADIS

GROUNDWATER SAMPLING LOG

Sampling Personnel: Number:	B006453	7.0000 Tas	sk 00500				Nell ID:	1W-2				
Weather: 50°, Cur			A 00000				14.	945	Time C	out: 113	0	
Well Information												
Depth to Water:	(feet)	0.03		(TIC)		Well Type:			Flushmou	nt 🗆	Stick-	Up √
Total Depth:	(feet)	5.06		(TIC)		Well Mater	rial:	St	ainless Stee	el V	Р	vc 🗆
Length of Water Column:	(feet)	5.03				Well Locke	ed:		Ye	s . D		No 🛘
Volume of Water in Well:	(gal)	0.82				Measuring	Point Marke	ed: .	Ye	s D		No 🖸
Three Well Volumes:	(gal)	2.46				Well Diam	eter:	1"		2° √	Other:	
Purging Information	YUMP ON	000	93	OFF B	1115							
Purging Method: (Peristaltic Pump)	Barnant] Ge	eoPump [S	ubmersible	Othe	r. Okazi i	344			ion Factor	
Tubing Material:	Silicone	□ Ро	lyethylene		Teflon	Othe	r.		gal / ft. of water	1* ID		D 6* ID 653 1.469
Sampling Method:	Barnant		GeoPump	N Su	bmersible	Othe	г.					37 cubic feet
Duration of Pumping:	(min)	75										
Average Pumping Rate:	(ml/min)	100	N	later-Quality	Meter Type	YSI-	556 & Ha	ch *	pH pH	DO DO	Cond.	TY <5 NTU
						A	2100P		∀ 0.1	∀ 10%	∀ 3.0%	∀ 10 mV
Total Volume Removed:	(gai)	1.98		>/ UI	d well go dry	: Yes	No	· ·				
	1	2	3	4	5.	6	7	. 8	9	1	0 1	11 , 1
Time:	1010	1015	1020	1025	1030	1035	1040	1045	1050			1/
Volume Purged (L)	1.03	1.50	2.00	2.50	3.00	3.50	4.00	4.50	500			**/
Rate (mL/min)	100	100	100	108	100	100	100	100	100			
Depth to Water (ft.)	10.04	10.04	10.04	10.04	10.05	1005	10.05	10.05	10.05		/	
pH	7.03	7.05	7.04	7.04	7.05	7.07	7.07	7.07	7.07		IV	
Temp. (C)	10.42	10.66	10.53	10.53	10.68	10.77	10.89	11.01	11.14		*	
Conductivity (mS/cm)	1.059	1.055	1.057	1.058	1.054	1.055	1.054	1.054	1.053			
Dissolved Oxygen	0.79	0.52	0.64	0.50	0.39	0.36	0.32	0.31	0.29	/		
ORP (mV)	-89.7	-940	-92.4	-924	-97.4	-190.6	-101.1	-103.0	-104.3	/		
Turbidity (NTU)	200	17.2	10.0	7.74	6.21	5.55	3.09	2.71	7.39	/		
Notes:										100		
	(6.1.20)		204 2		Anal	yses	# of Contain	ners Ar	nalyses		# o	of ntainers
Purge Water Description					TOCs		7 . 6	Ch	loride, Sulfa	ite, &	- 1	
initial Purge: SLT	NY THE RESERVE		OK	-	(40 ml with I	H ₂ SO₄)	2	(25	io mi) tal Metals		,	
Final Purge: CLEAR		NO.		-	(I L Poly)	n	. 1		0 ml with H	NO ₃)	ι	1
Well Integrity Information					PCBs (Total (Amber))	2	(25	50 ml)		1	
Surface Seal Condition (co			11 34 11	200D		INC	LUDE OVER	RSIGHT SP	LIT IN AMO	UNT TOT	ALS	
Locking Protective Well C			000		Sample ID:	T540	3012		San	nple Time	1050)
Well Lock Present? YES	Lock Cond	ition: Go	09		MS/MSD:	Yes	No	Duplic	ate:	Yes (No	
Other:					Duplicate ID): p	lA		Dup	. Time:	ro /A	
OVERSIGHT SAMPLE	1		TIME	:	Sampled By	r. ,		Log R	eviewed By			
	N/A		4/4	1	All samples	MFK submitted u	nder COC to	TAL of Sou	ith Burlingto	n, Vermo	nt.	
						ADIS						of

GROUNDWATER SAMPLING LOG

	MFK/AC							Well ID:	.1.		W 5	SMILE	6	SG	-5
Client / Job Number:		0000 Task	00500				THE RESERVE THE PARTY OF THE PA		3/09		Time (
Weather: 40°, OVE	CONTRACTOR OF THE PARTY AND ADDRESS OF THE PAR		-5					Time In:	<u> </u>	-	Time (Jut:			
Depth to Water:	(feet)			(ТІ	C)		Well Type:				Flushmou	nt 🗆		Stick-Ur	1
Total Depth:	(feet)			(TI	C)		Well Mater	ial:		Sta	ainless Ste	1		PVC	
Length of Water Column:	(feet)						Well Locke	ed:			Ye			No	
Volume of Water in Well:	(gal)						Measuring	Point Marke	ed:		Ye			No	
Three Well Volumes:	(gal)				₹		Well Diapa			1"		2° V	Other		
Purging Information															
Purging Method: (Peristaltic Pump)	Barnant	GeoF	ump [Subme	ersible	Othe	<u>. </u>				Conver	sion Fa 2" ID	ctors 4" ID	6" ID
Tubing Material:	Silicone [Polye	thylene			Teflon	Othe	г.			gal / ft. of water	1° ID 0.041	0.163	0.653	
Sampling Method:	Barnant [Ge	oPump		Subme	ersible	Othe	r.			1 gal = 3.	785 L =37			
Duration of Pumping:	(min)										Unit Stat	sility Mar	TH THE	BIDITY	<5 MTI
Average Pumping Rate:	(ml/min)		v	Vater-Qua	ality Met	er Type	YSI-	556 & Ha	ch		pH pH	DO DO	Con	-	ORP
Total Volume Removed:	(gal)				Did we	II go dry	: Yes	2100P No			∀ 0.1	∀ 10%	∀ 3.	and the same	∀ 10 mV
Time:	1425	2	3		4	5	6	7		8	9		10	11	
Volume Purged (L)	-												1		196
Rate (mL/min)	-					-,44									1000
Depth to Water (ft.)	-														
pH	6.13												1		
Temp. (C)	9.22														
Conductivity (mS/cm)	0.552														
Dissolved Oxygen	1282				1							A			
ORP (mV)	1916			1			,					1			
Turbidity (NTU)	7.76												0	1	
Notes:	1.10	1										1760			2
					F	Anal	yses	# of		An	alyses			# of	100
Purge Water Description	(Color? Odor	? Turbid? (Other?)			Allai	yses	Contain	ners		oride, Sulfa	to P		Conta	ainers
Initial Purge:		1			(40	Cs ml with l	H ₂ SO ₄)	2		Alk	alinity. 0 ml)	iic, o	(
Final Purge:					TSS	Poly)		1		Tot	al Metals 0 ml with H	NO ₂)	1		
Well Integrity Information	<u>ìn</u>	, ,			PCE	s (Total)	2		TD	S	1103)	1		
Surface Seal Condition (co	ncrete pad, bo	lts, manhole o	cover):	T	(Am	ber)	nic.	LIDE OVE	elo::-		0 ml)	LIMIT TO	TAL C		
ocking Protective Well C	ap/expansion p	olug:						LUDE OVER	SIGHT	SPL					
Well Lock Present?	Lock Conditi	ion:				ple ID:	56.5 Yes	TS NO	21	uplica		nple Time Yes	- 1	125	
Other:						MSD:		9	- 0	uplica			No		
OVERSIGHT SAMPLE	ID:		TIME			pled By		7.1				. Time:			
				THE RESERVE AND DESCRIPTION OF THE PERSON NAMED IN							eviewed By:				

GROUNDWATER SAMPLING LOG

Sampling Personnel: / Client / Job Number:		7.0000 Ta	sk 00500			Well ID: 5W0565 Date: 4/17/09								
Weather: 50°5	, CVAR,							1100	Time	Out: (130			
Well Information														
Depth to Water:	(feet)			TI	<u> </u>	Well Type			Flushmo	ount 🗌		Stick-Up	√_	
Total Depth:	(feet)			СПО	2)	Well Mate	rial:		Stainless St		PVC			
Length of Water Column	: (feet)	/				Well Lock	ed:			Yes . []		No		
Volume of Water in Well	(gal)					Measuring	Point Mark	ed:		Yes 🗍		No	П	
Three Well Volumes:	(gal)				_	Well Diam	eter:	1'		2" √	Other:			
Purging Information	TI	AKEN 1	ts sw	SAM	PLE S	6-5				2 1				
Purging Method: (Peristaltic Pump)	Barnant] G	eoPump []	Submersible	Othe	r:			Conver	sion Fa	ctors 4° ID	6° ID	
Tubing Material:	Silicone	P	olyethylene		Teflon	Othe	ır.		gal / ft. of water	0.041	0.163	0.653	1,469	
Sampling Method:	Barnant		GeoPump	0	Submersible	Othe	r		1 gal = 3	3.785 L =37	85 ml = 0	0.1337 a	ubic feet	
Duration of Pumping:	(min)								11.11.01	1.7774 1407		DIDITA		
Average Pumping Rate:	(ml/min)		v	/ater-Qua	lity Meter Type	YSI-	-556 & Ha	ich	pH	DO DO	Con		<5 NTU	
	<u> </u>						2100P		∀ 0.1	∀ 10%	∀ 3.0	-	/ 10 mV	
Total Volume Removed:	(gal)			33.	Did well go dry	r: Yes	No			. 1070	7 0.1	-70	10 1114	
	11151	2	3		4 5	6	7		3 9	9.	10	11	1	
Time: Volume Purged (L)	THI -					. 4		1. 1. 1/1	1	-		-34		
Rate (mL/min)	_							1		The second second				
						-			-					
Depth to Water (ft.)	10.05					-		1						
pH (C)	8.03					M								
Temp. (C)	11.17		10. 25.53			AH	/							
Conductivity (mS/cm)	0.543				1	V								
Dissolved Oxygen	13.20				1									
ORP (mV)	107.7													
Turbidity (NTU)	4.91	We have												
Notes:		/												
Purge Water Descriptio	n (Color? Ode	r? Turbid	2 Other?)		Ana	yses	# of Contai	ners '	Analyses			# of Conta	iners	
nitial Purge:					TOCs (40 ml with	H-80-)	8	1	Chloride, Sul Alkalinity.	fate, &	4			
final Purge:			/		TSS	112004)	4		250 mi) Total Metals		4			
Vell Integrity Informat	ion	/			(I L Poly) PCBs (Tota	1)	8		250 ml with	⊓NO3)	4			
urface Seal Condition (c	oncrete pad, b	olts, manho	ole cover):	4	(Amber)	INC			250 ml)	OUNT TO				
ocking Protective Well	king Protective Well Cap/expansion plug:							NOIGH I S	PLIT IN AM					
Vell Lock Present?	Sample ID:	1331001												
Other:					MS/MSD: Duplicate ID		1002			up. Time:				
OVERSIGHT SAMPLE	VERSIGHT SAMPLE ID: TIME: Sample								Reviewed B					
/					All samples	MFK	nder COC +			IMF	K			
					All samples	sconniced u	nder COC (IALOIS	odui auning	ion, vermo	AIL.			

ARCADIS

Attachment 3B

Groundwater and Surface Water Sampling Logs – Quarter 2 – June/July 2009

GROUNDWATER SAMPLING LOG

Sampling Personnel:	M. KOHA	3EN				١	Well ID:	1W-1	. (
Client / Job Number:	B006453	9.0000 Tas					Date: 6	- 7	101/009				
Weather: 76° F	OVER	CAST, 1	MOD W	~D			Time In:	430	Time	Out:	530		
	<i>-</i>	775			-	Well Type:					0.1		1
Depth to Water:	(feet)	272		(TIC)					Flushmou	- 1	St	ick-Up	
Total Depth: Length of Water Column:	(feet)	497		(TIC)		Well Mater			Stainless Ste			PVC	
Volume of Water in Well:	(feet) (gal)	0.81			-	Well Locked: Yes No							
Three Well Volumes:	(gal)	2.43				Measuring Point Marked: Yes							
Purging Information	(941)	400	mp on	B 14	135	Well Diame	eter:	1"		2° V)	Other:		
Purging Method: (Peristaltic Pump)	Barnant] Ge	eoPump [y 8	Submersible	Other			sion Fac				
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	gal / ft. of water	1° ID	2" ID 0.163	4" ID 0.653	6" ID			
Sampling Method:	Barnant		GeoPump	D S	ubmersible	Other	r:		1 gal = 3	.785 L =37			
Duration of Pumping:	(min)	85	5										
Average Pumping Rate:	(ml/min)			/ater-∩ualit	ty Meter Type	YSI-	556 & Ha	ich		bility, WI	1		
Average Fullipling Nate.	(1111/11111)	2		rater-Quant	ty Meter Type	•	2100P		pH ∀ 0.1	∀ 10%	Cond ∀ 3.0		ORP 10 mV
Total Volume Removed:	(gal)	2.21	5	D	id well go dry	: Yes	(Nd)		V 0.1	V 1076	V 3.0	70 1 4	101110
	1	2	3	4	5	6	7		8 9	1	10	11	12
Time:	1445	1450	1455	1500		1510							
Volume Purged (L)	1.00	1.50	2.00	250		3.50	\	P	1				
Rate (mL/min)	100	100	100	100	100	100							
Depth to Water (ft.)	777	7.77	7.77	777	7.77	777							
рН	7.54	7.55	753	7.53	7.50	7.47							
Temp. (C)	14.84	14.80	14.64	14.52	14.39	14.62	- A		X	m			
Conductivity (mS/cm)	0.812	0.872	0.873	0.874	-	0.875			1	140	1		
Dissolved Oxygen	0.30	0.36	0.28	0.20	0.21	0.23					1		
ORP (mV)	-113.1	-107.9	-108.2		1000	-107.8					1		
		The state of the s	0.000	-106.3								1	
Turbidity (NTU) Notes:	6.10	4.88	3.80	6.14	2.01	1.80							
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	lyses	# of Contai	ners	Analyses			# of Conta	iners
Initial Purge: CLEAK,					TOCs (40 ml with	H₂SO₄)	2		Chloride, Sult Alkalinity. (250 ml)	fate, &		1	
Final Purge: OEAR	NO 0	DOR.			TSS (I L Poly)		1		Total Metals (250 ml with I	HNO ₃)		1	
Well Integrity Informatio		PCBs (Tota (Amber)	1)	2		TDS (250 ml)		1	/				
Surface Seal Condition (con	0000		INC	LUDE OVE	RSIGHT S	SPLIT IN AM	OUNT TO	TALS					
Locking Protective Well Ca	~ 0	Sample ID:	Tena	370		Sa	ample Time	e: /5	10				
Well Lock Present? V65		MS/MSD:	TS4 O	No	. Dup	olicate:	Yes	No	.0				
Other:	Other: (500)):	NA		Du	ıp. Time:	NA	-	
OVERSIGHT SAMPLE	D:		TIME	:	Sampled By	· Me	V	Log	Reviewed B	y:			
PGW-MW1-01	10	All samples submitted under COC to TAL of South Burlington, Vermont.											

GROUNDWATER SAMPLING LOG

Sampling Personnel:						•		4W-0						
Client / Job Number:		9.0000 Tas	sk 00500					-01-	-		2 / 6			
Weather: (04° (i	ght ro	ain					Time In:	1140	Time (Out: 13	310			
Depth to Water:	(feet)	0.97		(TIC)		Well Type:			Flushmou	int 🗆	Stick-	Up √		
Total Depth:	(feet)	5.10		(TIC)		Well Mater	rial:	Si	tainless Ste	el V	P	vc 🗆		
Length of Water Column:	(feet)	4.13				Well Locked: Yes No								
Volume of Water in Well:	(gal)	67				Measuring Point Marked: Yes ☐ No ☑								
Three Well Volumes:	(gal)	2.01			-	Well Diam	eter:	1"		2" √	Other:			
Purging Information														
Purging Method: (Peristaltic Pump)	Barnant [Ge Ge	eoPump	S	Submersible	Othe	r.			T	ion Factors	Chicago Chicago		
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	r:		gal / ft. of water	1" ID 0.041		ID 6" ID 653 1.469		
Sampling Method:	Barnant		GeoPump	S S	ubmersible	Othe	r. •				0.163 0.6 5 ml = 0.133			
Duration of Pumping:	(min)	90							Unit Stal	LIIIL MAIT	U TURRINI	TV < E NTU		
Average Pumping Rate:	(ml/min)	100	w	ater-Qualit	y Meter Type	YSI-	556 & Ha 2100P	ch	pH pH	DO DO	H TURBIDIT	ORP		
Total Volume Removed:	(gal)			D	id well go dry	: Yes	(No	_	∀ 0.1	∀ 10%	∀ 3.0%	∀ 10 mV		
Total Volume Nemoved.	(gai)	2.3			ia well go dry	. 163	CNO	_						
	1	2	3	4		6	7	8	9	10	0 1	1 12		
Time:	1155	1200	1205	1210		1220	1775	1230						
Volume Purged (L)	1 1	1.5	2	2.5	3	3.5	4	4.5	1					
Rate (mL/min)	100	100	100	100	100	100	100	100						
Depth to Water (ft.)	7/10.99	110.99	10.99	10.99		10.99	10.99	10.99						
pH Tomp (C)	7.14	1,89	7.89	7.89	7.90	7.89	7.90	7.91						
Temp. (C) Conductivity (mS/cm)	13.69	13.64	13.62	13.49		13.40	13.41	1345						
Dissolved Oxygen	1.177	1.166	1.122	1.125		1.126	1.126	1.125						
ORP (mV)	180	-80.9	197	.41	.41	.33	,34	.33						
Turbidity (NTU)	77.0	00.1	- 17.1	-80.5		-71.6	-71.4	-65.7						
Notes:	2.96	2.32	1.84	1.20	1.03	.94	.81	.78						
Pump onell	45	Pump	400	1200	-		# of				# of	f		
Purge Water Description				1303	Anal	yses	Contai	iers	nalyses			ntainers		
Initial Purge: Clear	, no	odor			TOCs (40 ml with	H₂SO₄)	2	All	iloride, Sulfa kalinity. 50 ml)	ate, &	1			
Final Purge: Clear	, 110	odor	-		TSS (I L Poly)		1	To	tal Metals 50 ml with F	INO ₃)	1			
Well Integrity Informatio					PCBs (Tota (Amber)	1)	2	TO	Decide in the State	3/	1			
Surface Seal Condition (co	ncrete pad, b	olts, manho	le cover):	ood		INC	LUDE OVER			DUNT TOT	ALS			
Locking Protective Well Ca	ocking Protective Well Cap/expansion plug:							0		mple Time:		, ,		
Well Lock Present? Yes	Lock Cond	ition: 90	od		Sample ID: T540079 Sample Time: 1730 MS/MSD: Yes No Duplicate: Yes No									
Other:		J			Duplicate ID).			Du	p. Time:	41 : 4			
OVERSIGHT SAMPLE	D:		TIME:		Sampled By	10/	A	Log R	eviewed By		NIA			
N/A			N/A			mples submitted under COC to TAL of South Burlington, Vermont.								
				Ĺ	Victor of the									

Kalamazoo River Study Group – Plainwell TCRA,

GROUNDWATER SAMPLING LOG

Plainwell, Michig	an											
Sampling Personnel:	A.ON	اند				,	Well ID:	1W-(03			
Client / Job Number:	B006453	9.0000 Tas	k 00500				Date: 7	-01-				
Weather: 63° Well Information	overco	ist					Time In: (0930	Time C	out: //3	5	
Depth to Water:	(feet)	7.84		(TIC)		Well Type:			Flushmour	nt 🗆	Stick-Up	√_
Total Depth:	(feet) /	3.75		(TIC)		Well Mater	rial:	5	Stainless Stee	el V	PVC	
Length of Water Column:		3.91				Well Locke	ed:		Ye	s D	No	
Volume of Water in Well:	(gal) e	63		<u> </u>		Measuring	Point Mark	ed:	Ye	s 🗆	No	
Three Well Volumes:	(gal) [٠٩				Well Diam	eter:	1"	6 □	2" √	Other:	
Purging Information												
Purging Method: (Peristaltic Pump)	Barnant	Ge	oPump [√ Sı	ubmersible	Othe	r.				on Factors	6° ID
Tubing Material:	Silicone	Po	yethylene		Teflon	Othe	r.		gal / ft. of water		0.163 0.653	
Sampling Method:	Barnant		GeoPump	☑ Su	bmersible	Othe	r:		1 gal = 3.7	'85 L =3785	5 ml = 0.1337 c	ubic feet
Duration of Pumping:	(min)	110							Unit Stah	ility WITH	TURBIDITY	<5 NTII
Average Pumping Rate:	(ml/min)	100	w	ater-Quality	Meter Type	YSI-	556 & Ha 2100P	ach	pH	DO	Cond.	ORP
Total Volume Removed:	(gal)	290		Dio	d well go dry:	: Yes	No	3	∀ 0.1	∀ 10%	∀ 3.0% \	√ 10 mV
	1 1	2	3	4	5	6	7	8	9	10	11	12
Time:	0945	0950			1025		1035	1040	1			
Volume Purged (L)	1	1.5	2	2.5	5	5.5	6	6.5	7	\		
Rate (mL/min)	100	100	100	100	100	160	100	Mil million for	100	1		
Depth to Water (ft.)	9.86	100	100	100	9.86	9.86	9.86	9.86	9.86	1		
pH	1.80	YSI	Mainte	manc		7.88	7.92	7.96	7.98	1	V	
Temp. (C)	14.73			d for f	The state of the s	to see the second second	14.21	14.10	14.13		10	
Conductivity (mS/cm)	1.111		DC, who		1.029	1.017	1.008	1.007	1.006	(
Dissolved Oxygen	181				,38	.41	.46	241	.38			
ORP (mV)	-53.4				-78 %	-72.3	-70.3	-71.3	-66.8			
Turbidity (NTU)	16.4		1000		1.87	1.65	1.48	1.71	191			1
Notes:	10:1				101	1.00	1,10	11.01				1
Pump on 09 Purge Water Description				30	Anal	yses	# of Contai	ners A	nalyses		# of Conta	iners
Initial Purge: Clar			Other.)		TOCs (40 ml with I	1507	2		hloride, Sulfa lkalinity.	te, &	1	
Final Purge: Clar			_		TSS	12304)	1	Ť	otal Metals	NO.		
Well Integrity Information		Baor			(I L Poly) PCBs (Total)	^	Т	DS	NO ₃)	1	
Surface Seal Condition (co	oncrete pad, b	olts, manhol	e cover): O		(Amber)	INC	LUDE OVE		PLIT IN AMO	UNT TOTA	1	
Locking Protective Well C	ap/expansion	plug: 900	xcl	' -	Cample ID:							
Well Lock Present? 125	Lock Condi	tion: Q o	scl	-	Sample ID:	1 5 9 Yes	(NO)	7 Dupli			1045	
Other:		5.0			MS/MSD: Duplicate ID		ne com					
OVERSIGHT SAMPLE	ID:		TIME:		Sampled By		NIA	Log F	Reviewed By:		NIA	
PGW-MW3-	01	ı	045			A.O.V	Jeil nder COC to		outh Burlingto		t.	
					J				23910	,		

Kalamazoo River Study Group – Plainwell TCRA,

GROUNDWATER SAMPLING LOG

Plainwell, Michiga		.1						11.1.6	14				
Sampling Personnel:	1.0 Ne	ار 0.0000 Tas	r 00500			V	Nell ID: M	30-6	59				
Client / Job Number: Weather: 67° OV			K 00500					320	Time	Out: /	145		
Well Information	er cusi												
Depth to Water:	(feet)	1.15		(TIC)		Well Type:			Flushmou	unt 🗆	S	tick-Up	\checkmark
Total Depth:		4.44		(TIC)		Well Mater	ial:	5	Stainless Ste	el V		PVC	
Length of Water Column:	(feet) 3	3.29				Well Locke	ed:		Y	,	No		
Volume of Water in Well:	(gal)	53				Measuring	Point Marke	ed:		es 🛛		No	
Three Well Volumes:	(gal)	1.10				Well Diame	eter:	1"		2" √	Other:		
Purging Information													
Purging Method: (Peristaltic Pump)	Barnant] Ge	eoPump [s s	ubmersible	Other	r.			Conver	sion Fac	d* ID	6" ID
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Other	r.		gal / ft. of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant		GeoPump	Su	ubmersible	Other	r.		1 gal = 3	.785 L =37			
Duration of Pumping:	(min)	85							Unit Sta	bility, WI	TH TUR	BIDITY «	<5 NTU
Average Pumping Rate:	(ml/min)	100	w	ater-Quality	Meter Type		556 & Ha	ch	pH	DO DO	Con		ORP
Total Volume Removed:	(gal)			Di	d well go dry		2100P	7	∀ 0.1	∀ 10%	∀ 3.0	0% ∀	10 mV
Total Volume Removed.	(gai)	2.24			a mail go di y		(_					
	1	2	3	4	5	6	7	8	9		10	11	12
Time:	1335	1340	1345	1350	and the second second	1400							
Volume Purged (L)	1	1.5	Z	2.5	3	3.5			:				
Rate (mL/min)	100	100	100	100	100	100							
Depth to Water (ft.)	11.16	11.16	11.16	11.16	11.16	11.16							
рН	7.17	7.20	7.18	7.17	7.17	7.16							
Temp. (C)	15.73	15.70	15.67	15.62	15.55	15.52			A	0			
Conductivity (mS/cm)	1.090	1.089	1.087	1.084	1.087	1.085			1/1	1)			
Dissolved Oxygen	,49	.60	.48	.39	.38	.33			100	. 2			
ORP (mV)	-80.2	-79.9	-80.D	-80:3		-80.0					1		
Turbidity (NTU)	7.83	6.48	5.49	4.08		3.42							
Notes:	11.0	0.70	0.11	1.00	3.00	J. 10						1	\
Pump on @13	275	Pump	.000 1	1120			# of					# of	1
Purge Water Description	(Color? Od	or? Turbid	? Other?)	725	Anal	yses	Contair	ners	nalyses			Contai	iners
Initial Purge: Clear,	no od	or			TOCs (40 ml with I	H ₂ SO ₄)	2	A	chloride, Sulf lkalinity. 250 ml)	ate, &		1	
Final Purge: Clear,	no 00	lor			TSS (I L Poly)		1	Ť	otal Metals 250 ml with I	HNO ₂)		1	
Well lategrity laformatio	2				PCBs (Total)	2	Т	DS			1	
Surface Seal Condition (cor	norste pad, b	olts, manhol	le cover): 9	00d -	(Amber)	INCI	LUDE OVER		250 ml)	DINT TO	PIAT	1	
Locking Protective Well Co	apicigarsion	plug Go	od		Comple ID			COGITI OF					
Well Lock Present' YCS	Lock Condi	ition: 900	od		Sample ID: MS/MSD:	T540 Yes	075	Dupl	Sa icate:	mple Tim Yes	(NE)	400	
Other:		9									_		
OVERSIGHT SAMPLE I	Dt:		TIME:	-	Duplicate ID Sampled By			Logs	Reviewed B	p. Time: v:			
NIA			NIA		All samples	A.O.	Veil				net		
				L	- Samples	Jan Hilliam G	- COC 80	LUI 30	July During	on, venil			

Kalamazoo River Study Group – Plainwell TCRA,

GROUNDWATER SAMPLING LOG

Plainwell, Michiga	n /	*											
Sampling Personnel:	1. KONA	82				. 1	Well ID:	W-5					
Client / Job Number:	B006453	9.0000 Tas	k 00500					30/09					
Weather: 65°F	PAR	724 CLO	507, M	od W.	uD Gu		Time In: 1;	300	Time C	out: 44	1615		
Well Information		147											
Depth to Water:	(1004)	11.02		(TIC)		Well Type:			Flushmou	1	Stick-Up	<u> </u>	
Total Depth:	(feet)	3.21		(TIC)	-	Well Mater	rial:	S	Stainless Steel V PVC				
Length of Water Column:	(feet)					Well Locke	ed:		Ye	es 🖳	_ No		
Volume of Water in Well:	(gal)	0.52				Measuring	Point Marke	ed:	Ye	s 🗹	No		
Three Well Volumes:	Pomp	* N (3)	1305			Well Diam	eter:	1"	0 /	2" 7 0	other:		
Purging Information	1000	OFF 6		3 -					,				
Purging Method: (Peristaltic Pump)	Barnant [eoPump		ubmersible	Othe	r.			Conversio	n Factors	6" ID	
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	r:		gal / ft. of water		163 0.653		
Sampling Method:	Barnant		GeoPump	S	ubmersible	Othe	r:		1 gal = 3.7		ml = 0.1337 c		
Duration of Pumping:	(min)	185	2.							1124 . 140 TO	TUDDIDE	of NT	
Average Pumping Rate:	(ml/min)	100	W	ater-Qualit	Meter Type	YSI-	556 & Ha	ch	pH pH	DO DO	TURBIDITY Cond.	ORP	
		100					2100P		∀ 0.1			√ 10 mV	
Total Volume Removed:	(gal)	4.89		D	d well go dry	: Yes	No	3_		1070	1 0.070		
	1	2	3	4	5	6	7	8	9	10	11	12	
Time:	1315	1320	1325	1330	1335	1345	1350	1355	1400	1405	1410	1	
Volume Purged (L)	1.00	1.50	2.00	2.50	300	4.00	4.50	5.00	5.50	6.00	6.50		
Rate (mL/min)	100	106	106	100	100	100	100	106	100	100	100		
Depth to Water (ft.)	11.03	11.83	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.03	11.03		
рН	7.61	7.53	7.52	7.53	7.52	743	743	743	7.41	7.43	7.42	S	
Temp. (C) 15.68		16.10	15.83	15.6	1501	15 M	14.83	14.85	1494	14.84	14.62	(A)	
Conductivity (mS/cm)	1.109	1.098	1.092	1.093	1.091	1.084	1.084	1.083	1.079	1.079	1.077	1	
Dissolved Oxygen	0.31	0.32	0.34	0.25	0.19	035	0.18	0.20	0.14	0.14	0.15		
ORP (mV)	-77.6	-799	-78.8	-81.9	-797	-78.8	-757	-74.9	-756		-80.6	1	
Turbidity (NTU)	35.0	28.1	24.9	21.2	18.0	9.75	8.88	4.98	4.60	4.36	3.67	1	
Notes:	02:0	22.1		<i>p</i> ~	CLEANED	1012	0.00	1, 10	1.00	1.00	7.61	1	
				Г	FIC								
Purge Water Description (Color? Od	or? Turbid	? Other?)		Anal	yses	# of Contain	ners A	nalyses		# of Conta	ainers	
Initial Purge: SLT C	LOUDY,	100 00	cR		TOCs (40 ml with l	H₂SO₄)	6	Al	hloride, Sulfa kalinity. 50 ml)	ite, &	3		
Final Purge: CUEAR					TSS (I L Poly)		3	To	otal Metals 50 ml with H	NO ₃)	3		
Well Integrity Information	1				PCBs (Total (Amber))	6	TI	OS 50 ml)		3		
Surface Seal Condition (con-	crete pad, b	olts, manho	le cover):	0000		INC	LUDE OVER		LIT IN AMO				
Locking Protective Well Cap	p/expansion	plug: Go	0		Sample ID:	TSU	Hege		San	nple Time:	1410		
Well Lock Present?	Lock Cond	-			MS/MSD:	Yes	No	Dupli		-	9		
Other: 145		G00.	0		Duplicate ID	: N	1A		Dur	o. Time:	ماد		
OVERSIGHT SAMPLE II	D:		TIME		Sampled By		1/	Log F	Reviewed By		/		
4/4			410		All samples	submitted u	nder COC to	TAL of So	uth Burlingto	on, Vermont.		-	
				L									

ARCADIS

Water Sampling Log

Project No.	B064539.00.500 Page 1 of Z
Site Location Plainwell, MI	Date 7-01-09
Site/Well No Replicate No.	. <u>N/A</u> Code No. <u>N/A</u>
Weather 105° overcust Sampling Tir	me: Begin <u>1355</u> End <u>1505</u>
Evacuation Data	Field Parameters
Measuring Point TOC	Temperature (°C)
MP Elevation (ft) N/A	SpC (mS/cm) . 9 69
Land Surface Elevation (ft) N/A	CND (mS/cm) .747
Sounded Well Depth (ft bmp) 15.85	Dissolved Oxygen (%) 2.4
Depth to Water (ft bmp) 10.85	Dissolved Oxygen (mg/L) . 26
Water-Level Elevation (ft)	pH (s.u.) 8.27
Water Column in Well (ft) 5.0	ORP (mV) 78.4
Casing Diameter/Type 2" Stainless Steel	Turbidity (NTU) . 86
Gallons in Well	Color <u>Clear</u>
Gallons Pumped/Bailed	Odor
Prior to Sampling 1.8	Appearance (lac
Sample Pump Intake Setting (ft bmp) 144 bmp	Sampling Method Low Flow
Purge Time begin 1315 end 1505	Remarks X Supe-2 collected powers
Pumping Rate (ml/min) 100	ID-T540030 30%
Evacuation Method peristaltic pump	DUPE ID-TS40031 (ms
Constituents Sampled Container Description	Number Preservative
Tocs 40ml VOA	<u> 4 H2504</u>
TSS IL poly	<u> </u>
PCBs IL amber	
Chloride, Sulfate: Alkahnty 250ml poly	
Total Metals 250mlpoly	
TDS 250 ml poly) 2
Sampling Personnel A. O'Nul	
Well Casing Volumes Gal./Ft. 0.5" = 0.01 1-1/4" = 0.06 2" = 0.16 3" = 0.3	7 4" = 0.65
1" = 0.04	.50 6" = 1.47
bmp Below measuring point mL Milliliter °C Degrees Celsius mS/cm Millisiemens per centimeter	NTU Nephelometric turbidity units PVC Polyvinyl chloride
ft Feet msl Mean sea level	s.u. Standard units
gpm Gallons per minute N/A Not applicable mg/L Milligrams per liter NR Not recorded	umhos/cm Micromhos per centimeter VOC Volatile organic compounds
ENFM006-Water Sampling Log.xls	Document #ENFM006, Revision 03

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE Z OF Z

WELL: MW-06 PROJ#: B0064539.0000.00500

LOC: Plainwell, MI DATE: 7-01-09

Ditte.	1-01	01			200.		swell,	1-1-4-			
Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	рН	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW	YOL _
1325	13.36	.974	.756	6.1	.64	8.00	-68.3	100	3.18	10.86	1
1330	13.22	.971	.753	5.4	.56	7.84	-77.8	100	2.49	10.86	1.5
1335	13.11	.970	.750	4.2	.45	8.13	-80.8	100	1.98	10.87	Z
1340	13.05	.969	,748	3.7	.40	8.18	-71.2	100	1.76	10.88	2.5
1345	CONTRACTOR OF THE RESERVE OF THE PARTY OF TH	.969	.749	3.0	. 32	8.21	-78.7	100	1.23	10.88	3
1350	12.97	.970	.747	2.8	.30	8.72	-83.9	100	1.01	10.88	
1355	13.00	THE RESERVE OF THE PROPERTY OF	.747	2.4	.26	8.22		100	.86	10.88	
											34.7
								N west		KILLE	37
		WO	11-1								
		MO-85	STATE OF THE PARTY								
Depth To	Water Befo	re Purging:									
Depth To	Water After	Purging:	10.88								

GROUNDWATER SAMPLING LOG

Sampling Personnel:	M. KOHA		H. A.				Well ID:	NW-7					
Client / Job Number:		9.0000 Tas					Date: 7	01/09					
Weather: 60°, over	ECAST,	LT WIN	>,				Time In: \	140	Time C	out: [330		
Depth to Water:	(feet)	11.30		(TIC)	7	Well Type			Flushmou	nt 🗆	S	tick-Up	V
Total Depth:	(feet)	14.68		(TIC)	-	Well Mate					PVC		
Length of Water Column:	(feet)	3.38				Well Locke		3					
Volume of Water in Well:	(gal)	0.55					Point Mark	od:	Yes No				
Three Well Volumes:	(gal)	1-65							Ye	1	011	No	
	Pur		0 1175			Well Diam	eter:	1"		2" V	Other:		
Purging Information		OFF	0 131		1000					0	-1 F		
Purging Method: (Peristaltic Pump)	Barnant] Ge	eoPump [1	Submersible	Othe	r			1" ID	sion Fac	4" ID	6" ID
Tubing Material:	Silicone	Po	lyethylene		Teflon	Othe	r.		gal / ft. of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant		GeoPump	S	Submersible	Othe	r.	1 gal = 3.7		85 ml = 0.1337 cub			
Duration of Pumping:	(min)	110											
Average Pumping Pate:	Average Pumping Rate: (ml/min) 100 Water-Quali							ach	Unit Stat				The state of the s
Average Fullipling Rate.									pH ∀ 0.1	DO ∀ 10%	Cond ∀ 3.0		ORP / 10 mV
Total Volume Removed:	(gal)	2.9		D	oid well go dry	: Yes	No)	V 0.1	V 10%	V 3.0	170 \	10 mv
	1	2	3	1 4	5	6	7	8	9	T .	10	11	
Time:	1145	1155	1200	1205	1210	1215	1220	1225	1230				1
Volume Purged (L)	7.00	3.00	3.50	4.00	4.50	5.00	5.50	6.00	:6.50				1
Rate (mL/min)	100	100	100	FCO	100	100	100	100	(00				/
Depth to Water (ft.)	11.31	11:31	11.31	11.31	11.31	11.31	11.31	11.31	11.31			/	
pH	7.40	7.41	7.42	7.42	7.42	7.43	7.43	7.42	7.41			1/	
Temp. (C)	1311	13.18	13:46	13.87	13.81	13.57	13.61	13.40	13.47		W		
Conductivity (mS/cm)	1.039	1.019	1.011	1.013	1.012	1.004	1000	0.999	0.997		X		
Dissolved Oxygen	0.43	0.54	0.51	0.32	0.53	0.28	0.21	0.20	0.20		/		
ORP (mV)	-57.4	-60.5	-63.2	-60.0		-68.6	-71.5	-73.8	-75.4	/			
Turbidity (NTU)	25.5	16.7	13.2	11.1	832	107	4.84	4.52	3.51	/-			
Notes:	420	10.1	12.6	11-1	0.06	(0.41	1.0.1	1.0	2.01				
Purge Water Description	(Color? Od	or? Turbid	2 Other?)		Anal	yses	# of Contai	ners A	nalyses			# of Conta	iners
Initial Purge: CLOUPY		9008	. Other . I	×	TOCs (40 ml with l	H₂SO₄)	2	All	nloride, Sulfa kalinity. 50 ml)	ite, &	1		
Final Purge: CLEAR	, 100	Dop			TSS (I.I. Bols)		1	To	tal Metals	NO.	1		
Well Integrity Information	200316				(I L Poly) PCBs (Total (Amber))	2	TC	50 ml with H DS 50 ml)	NO ₃)	1		1,
Surface Seal Condition (co	oncrete pad, b	olts, manho	le cover):	· One	(micon)	INC	LUDE OVE	<u> </u>	LIT IN AMO	UNT TO	TALS		
Locking Protective Well C	Cap/expansion	plug:	ND (2000	Camela ID		200	NOIGHT OF					
Well Lock Present?	Lock Cond	lition:	00		Sample ID: MS/MSD:	TS40 Yes	(NO)	Duplio		nple Time Yes	No No	8	
Other:		00	1		Duplicate ID): N	A		Dup	o. Time:	NA		
OVERSIGHT SAMPLE	ERSIGHT SAMPLE ID: TIME:						//	Log F	Reviewed By	11	/		
N	Alu Alu						Index COC +	o TAL of Co	uth Burlingto	WEK	ont		
					All samples	Submitted t	inder COC [0 IAL 01 30	un bunnigt	AI, VEIIII	JIIL.		

GROUNDWATER SAMPLING LOG

Sampling Personnel:	BOOKAS3	9.0000 Ta	k 00500				Date: A7/	31 09				MATERIAL TO	
Client / Job Number:	CRCAST		JIND				Time In:	11 101	Time	Out: 11	15		
Well Information	ettinst,						viiiie iii.	120	Time	out. II			
Depth to Water:	(feet)	7.89		(TIC)		Well Type			Flushmou	unt 🗆	S	tick-Up	\checkmark
Total Depth:	(feet)	8.46		(TIC)		Well Mate	rial:		Stainless Ste	el V		PVC	
Length of Water Column:	(feet)	8.57			_	Well Locke	ed:		Y	es 🗈			
Volume of Water in Well:	(gal)	1.40				Measuring	Point Marke	ed:		es 🗈		No No	
Three Well Volumes:	(gal)	4.19			_	Well Diam		1'		(2° V)	Other:		
Purging Information	Po	MP ON		190				•		(2 1)			
Purging Method:	Barnant	SHEET HER THE PARTY SAN		-	Submersible	☐ Othe	r.			Conver	sion Fa	ctors	
(Peristaltic Pump) Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe			gal / ft.	1" ID	2" ID	4" ID	6" ID
Sampling Method:	Barnant	П	GeoPump	S	Submersible	Othe			of water	0.041	0.163	0.653	1.469
		90		И					1 gal = 3	.785 L =37	'85 ml = 0	0.1337 cu	ubic feet
Duration of Pumping:	(min)	70				VSI	556 & Ha	ch	Unit Sta	bility, WI	TH TUR	BIDITY	<5 NTU
Average Pumping Rate:	(ml/min)	100	N	Vater-Quali	ty Meter Type	: 101-	2100P	CIT	pH	DO	Con	d.	ORP
Total Volume Removed:	(gal)	2.39	3		Did well go dry	Yes	No	9	∀ 0.1	∀ 10%	∀ 3.0	0% \	/ 10 mV
	1 1	2	3	4	5	6	7		8 9		10	11	1:
Time:	0950	1000	1005	1015	1020	1025						,,	/
Volume Purged (L)	1.00	2.00	2.50	3.50	4.00	4.50	e a Alvesti					/	
Rate (mL/min)	100	100	100	100	100	100		-					
Depth to Water (ft.)	9.89	9.89	9.89	9.89	9.89	9.89				1	1		
pH	7.36	7.43	7.42	7.41	7.40	7.40			1				
Temp. (C)	14.3	14.17	14.06	CINCAL PROPERTY.	14.08	14.13			MAG	1			
Conductivity (mS/cm)	1.054	1.055	1.054	14,10		1.053			M	4-			
Dissolved Oxygen	2.12	TO DESCRIPTION OF THE PARTY OF	0.31	1.056	tual Activities in the Police	ediatria in particular de la companya		/					
		-75.5		0.22		0.20							
ORP (mV)	-72.7	3 000 00	-78.1	-76.9	-75.4	-75.7	/						
Turbidity (NTU) Notes:	26.8	14.6	9.90	4.97	4.55	3.51							
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	# of Contain	ners	Analyses			# of Conta	iners
Initial Purge: (1800)	, No 0	pae			TOCs (40 ml with l	H ₂ SO ₄)	2		Chloride, Sulf Alkalinity. (250 ml)	ate, &		1	
Final Purge: CLEAR	No 00	20			TSS (I L Poly)		1	137	Total Metals (250 ml with I	HNO ₃)		1	
Well Integrity Informatio	<u>n</u>				PCBs (Total (Amber))	. >		TDS (250 ml)		1		
surface Seal Condition (con		INC	LUDE OVER		SPLIT IN AMO	OUNT TO	TALS						
ocking Protective Well Ca	ocking Protective Well Cap/expansion plug: Sam												
Well Lock Present?	ell Lock Present? Lock Condition:						Sample ID: TS40020 Sample Time: 162 MS/MSD: Yes No Duplicate: Yes No						
Other: VES					Duplicate ID		IA		Du	p. Time:	NA		
WERSIGHT SAMPLE	D:		TIME	:	Sampled By		lbt.	Log	Reviewed By		1-/14		
N	A		NI	A		IVE	K			MX	5		
	All sa						nder COC to	TAL of S	South Burlingt	on, Verm	ont.		

Kalamazo	o River Study
Group - P	lainwell TCRA
Plainwell,	Michigan
	4

GROUNDWATER SAMPLING LOG

Sampling Personnel:	.D.N					- 1	Well ID: MY	-00	1				
Client / Job Number:		9.0000 Tas	k 00500					2-1					
Weather: (040 OV)	creast						Time In: 09	05	Time	Out: 16	30		
Depth to Water:	(feet)	4.69		(TIC)		Well Type:			Flushmo	ount 🗆	St	ick-Up	
Total Depth:	(feet)	9.49		(TIC)		Well Mater	ial:	S	Stainless St	1		PVC	
Length of Water Column:	(feet)	4.8				Well Locke	ed:			Yes 🗹		No	
Volume of Water in Well:	(gal)	78				Measuring	Point Marked:			Yes 🗌		No	0
Three Well Volumes:	(gal) ó	1.34				Well Diam	eter:	1"		2" √	Other:		
Purging Information													
Purging Method: (Peristaltic Pump)	Barnant [Ge	eoPump	√ s	ubmersible	Othe	r			Convers	sion Fac	tors 4" ID	6* ID
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	r.		gal / ft. of water		0.163	0.653	1.469
Sampling Method:	Barnant		GeoPump	St.	ubmersible	Othe	r.		1 gal = 3	3.785 L =37	85 ml = 0.	1337 cu	ibic feet
Duration of Pumping:	(min)	85							Heit Ct	ability, WI	ru Tilon	עדותו	S NTII
Average Pumping Rate:	(ml/min)	100	W	Vater-Quality	Meter Type:	YSI-	556 & Hach 2100P		pH	DO DO	Cond		ORP
Total Volume Removed:	(gal)	2.2	U	Di	d well go dry:	Yes	(No)		∀ 0.1	∀ 10%	∀ 3.0	% \	′ 10 mV
	002	2	3	1 2012	5	6	7	8	9	9 1	0	11	12
Time: Volume Purged (L)	0925	0930	0935	2.5	0945	3.5	0955						
Rate (mL/min)	100	100	100			100	100	1	:				
Depth to Water (ft.)	14.70	14.70	1470	14.77	14.70	14.70	14.70		1				
рН	7.21	737	7.35	7.36		737	7.36		1	1			
Temp. (C)	11.96	11.87	11.81	11.80	11.73	1171	11.69			N)		
Conductivity (mS/cm)	.877	.857	, 849	.843	.838	.837	.837			D.			
Dissolved Oxygen	,51	39	.34	,29	.29	, 29	.31			4	1		
ORP (mV)	-66.9	-21.8	-10.9	-8.9	-18.3	-17.6	-16.2					1	
Turbidity (NTU)	6.39	5.18	3.49	3.06	NAME AND ADDRESS OF THE OWNER, WHEN PERSON NAMED IN	1.01	1.42						/
Notes:													1
Pump on 091 Jurge Water Description		or? Turbid	? Other?)		Anal	yses	# of Containe	rs A	nalyses			# of Conta	iners
nitial Purge: Clear					TOCs (40 ml with l	H ₂ SO ₄)	2	A	hloride, Sulkalinity. 250 ml)	lfate, &		1	
inal Purge: Clear					TSS (I L Poly)		1	To	otal Metals 250 ml with			1	
Well Integrity Information		PCBs (Total (Amber))	2	Т	DS 250 ml))				
urface Seal Condition (cor	crete pad, b	(anoer)	INC	∠ LUDE OVERS			OUNT TO	TALS					
ocking Protective Well Ca	p/expansion	plug: 90	od `		Sample ID:	7/11			c.	ample Time	. 0/	VEE	7
Well Lock Present? Yes	Lock Cond	ition: 90	od		MS/MSD:	159 Yes	0033	Dupli	icate:	Yes	(6)	155)
ther.		7			Duplicate ID		1 / n		D	up. Time:	N/	м	
			TIME		Suprisuite 10	1)/A			ъ. т.по.	10/	A	
OVERSIGHT SAMPLE I	D:		TIME		Sampled By	λ	1	Log	Reviewed E	By:			

Kalamaz	00	River	Study
Group -	Pla	inwell	TCRA

GROUNDWATER SAMPLING LOG

Plainwell, Michiga	in A													
Sampling Personnel:	A.01	Veil					Well ID: H	1W-	10	- an allega an				
Client / Job Number:		9.0000 Tas	sk 00500					-30						
Weather: (05° 0) Well Information	verca	st					Fime In: /	115	Time	Out:				
Depth to Water:	(feet)	3.48		(TIC)	-	Well Type:			Flushmou	unt 🗆	S	tick-Up	V	
Total Depth:		24501	10	(TIC)		Well Mater	rial:		Stainless Ste	.1		PVC		
Length of Water Column:		3.97				Well Locke	ed:			es 🗹		No		
Volume of Water in Well:		64			_	Measuring	Point Marke	ed:		es 🗆		No		
Three Well Volumes:	(gal)	9				Well Diame		1		2" V	Other:			
Purging Information								'		2 1				
Purging Method: (Peristaltic Pump)	Barnant	Ge	eoPump [y :	Submersible	Other	r.			Conver	sion Fac	tors	6° ID	
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Other	r.		gal / ft. of water	0.041	0.163	0.653	1.469	
Sampling Method:	Barnant		GeoPump	✓ s	ubmersible	Other	r.		1 gal = 3	.785 L =37				
Duration of Pumping:	(min)	35							11-14-04-	6.11.4 JAH	THE THIN	NDITY.	es NITH	
Average Pumping Rate:	(ml/min)	100	W	/ater-Qualit	ty Meter Type		556 & Ha	ch	pH pH	bility, WI	Con		ORP	
		100					2100P	-	∀ 0.1	∀ 10%	∀ 3.0		′ 10 mV	
Total Volume Removed:	(gal)	.42		U	oid well go dry	r: Yes	No	_						
	1	2	3	4	5	6	7		8 9		10	11	12	
Time:	1130	1135	1140	1145	1150	1155								
Volume Purged (L)	1	1.5	Z	2.5	3	3.5	1							
Rate (mL/min)	100	100	100	100	100	100	1							
Depth to Water (ft.)	8.49	8.49	8.49	8.49	8.49	8.49		1						
рН	7.01	7.00	7.00	7.01	7.01	7.01			1	,				
Temp. (C)	14.31	14.08	14.18	14.21	14.19	14.05			N)'				
Conductivity (mS/cm)	1.140	.907	1.145	1.144	1.43	1.145			Ma					
Dissolved Oxygen ms	1.11	,75	165	,51	.43	.41				1				
ORP (mV)	-77.8	-79.7	-82.6			-76.5					1			
Turbidity (NTU)	5.11	4.86	3.12	2.27	2.24	2.36					1			
Notes:												1	\	
Pump on ell Purge Water Description		or? Turbid	? Other?)		Ana	lyses	# of Contain	ners	Analyses			# of Contai	iners	
Initial Purge: Clar				xidit 4	TOCs (40 ml with	H ₂ SO ₄)	Z		Chloride, Sulf Alkalinity.	ate, &		ı		
Final Purge: Clear							(million S	(250 ml) Total Metals (250 ml with h	INO ₂)		1		
Well Integrity Information					PCBs (Tota (Amber)	1)	7		TDS (250 ml)			1		
Surface Seal Condition (con		INCI	LUDE OVER		SPLIT IN AMO	OUNT TO	TALS							
Locking Protective Well Ca	p/expansion	plug: 90	od		Sample ID:	Sample ID: T540023 Sample Time: 1155								
Well Lock Present? 725	Lock Condi	ition: 900	od		MS/MSD:	Voc 6 Desirato: Voc 6								
Other:					Duplicate ID):	_		Du	p. Time:	_			
OVERSIGHT SAMPLE I	D: (15)	5	TIME	:	Sampled By	Neil		Log	Reviewed By	r:				
PGW - MW10-03			P)			1	nder COC to	TAL of S	South Burlingt	on, Vermo	ont.			

ARCADIS

Water Sampling Log

Project PlainWell Site Legation PlainWell	Project No. Boold . 39.	Soo Page 1 of Z Date 10-29-09
Site Location Panwell, MT Site/Well No. MW-11	Poplicate No. Al /A	
	Replicate No. N/A	
Weather Loss overcast	Sampling Time: Begin 153	S End <u>1620</u>
Evacuation Data	Field Parameter	s
Measuring Point TOC	Temperature (°C	14.24
MP Elevation (ft)	SpC (mS/cm)	1.015
Land Surface Elevation (ft) N/A	CND (mS/cm)_	,806
Sounded Well Depth (ft bmp) 12.95	Dissolved Oxyge	en (%) 3.6
Depth to Water (ft bmp) 7.49	Dissolved Oxyge	en (mg/L) , 37
Water-Level Elevation (ft) N/A	pH (s.u.)	1.23
Water Column in Well (ft)	ORP (mV) _	177.6
Casing Diameter/Type	Turbidity (NTU)_	3.88
Gallons in Well	Color C	clear
Gallons Pumped/Bailed	Odor	none
Prior to Sampling 1.05	Appearance (clear
Sample Pump Intake Setting (ft bmp) 1ft bmp	Sampling Method	
Purge Time begin 1455 end 11	Remarks Sar	mple ID: 7540019
Pumping Rate (ml/min)		
Evacuation Method peristaltic	(Geo Pump)	
이 나는 사람은 살아왔다면 하는 것이 되었다. 그 사람들은 사람들은 사람들은 사람들은 사람들은 사람들이 되었다.	r Description Numb	
		<u> 45204</u>
TSS IL	Poly 1	
PCBe 12 16 to 2012 1 12	Amber 2	
Chloride, Sulfate 3 Alkalinity 250	m poly	11.00
Total Metals 250		
<u>TDS</u> 250	m poly	
Sampling Personnel A.O. Neil		
Well Casing Volumes		
Gal./Ft. $0.5" = 0.01$ $1-\frac{1}{4}" = 0.06$ $2" = 0.1$ $1" = 0.04$ $1-\frac{1}{2}" = 0.09$ $2-\frac{1}{2}" = 0$		
bmp Below measuring point mL Milliliter	NTU N	ephelometric turbidity units
°C Degrees Celsius mS/cm Millisieme ft Feet msl Mean sea		olyvinyl chloride tandard units
gpm Gallons per minute N/A Not applic mg/L Milligrams per liter NR Not record		licromhos per centimeter olatile organic compounds
ENFM006-Water Sampling Log.xls		Document #ENFM006, Revision 03

ARCADIS

YSI/LOW FLOW SAMPLING LOG

PAGE Z OF Z

WELL: MW-II PROJ#: B00645.0039.00506

DATE: 6-29-69 LOC: Plainwell, MI

							. /				
Time	Temp Degree C	SpC mS/cm	CND mS/cm	DO%	DO mg/L	pН	ORP mV	Flow Rate mL/min	Turbidity NTU	DTW	VOL
1505	14.58	1.025	.870	11.0	1.09	7.23	-111.0	100	6.36	7.51	1
1510	14.83	1.019	.821	6.5	.66	7.24	-118.9	100	5.37	7.51	1.5
1515	14.64	1.015	,814	6.5	.60	7.24	-121.2	100	4.43	7.51	2
1520	14.62	1.017	.815	5.0	150	7.24	-119.7	100	3.64	7.51	2.5
1525	14.44	1.015	decrease and the second second	4.1	.42	7.23	-122.5	100	3.15	7.51	3
1530	14.45	TOTAL DISCUSSION OF STREET		3.7	.37	7. 23	-121.3	100	4.03	7.51	3.5
1535	14.24	1.015	1806	3.6	.37	7.23	-122.6	100	3.88	7.51	4
											-
			The Bay Control								
								F			
THE REPORT OF THE PARTY OF THE											
					100 mm 1 mm 1 mm 1 mm 1 mm 1 mm 1 mm 1						
								1			
Total Dept		12.95									
Depth To \	Water Before	re Purging:	7.49								
Depth To \			7.51								

Kalamazoo Rive Group – Plainwe	
Plainwell, Michig	gan
Sampling Personnel:	A.01
Client / Joh Number	B00645

GROUNDWATER SAMPLING LOG

Spring 2009 EVENT

Sampling Personnel:	H. UN	211					Well ID: M						
Client / Job Number:	1	7.0000 Tas	-		_		Date: 6 -	29-09	-		150		-
Weather: 70° 0V	ercast	mo	derate	L win	Lq		Time In:	300	Time C	out: / 9	150		
Depth to Water.	(feet)	1.21		(TIC)		Well Type:			Flushmou	nt 🛮	Stick-	Up	V
Total Depth:	(feet)	1.98		(TIC)		Well Mater	rial:	SI	tainless Stee	.1		VC	П
Length of Water Column:	(feet)	1.72				Well Locke	ed:		Ye	5/		No	
Volume of Water in Well:	(gal)	44				Measuring	Point Marke	ed:	Ye			No	2
Three Well Volumes:	(gal) [33				Well Diam				2° V	Other:	NO	
Purging Information							-			2 4	- Alleria		
Purging Method: (Peristaltic Pump)	Barnant] G€	eoPump	y s	Submersible	Othe	r.			Convers	ion Factor	s ID	6.
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	г.		gal / ft. of water	0.041		653	1.4
Sampling Method:	Barnant		GeoPump	S S	ubmersible	Othe	r. —		1 gal = 3.7		5 ml = 0.133		1
Duration of Pumping:	(min)	55							Unit Stat	ility. WIT	H TURBIDI	TY <	5 N7
Average Pumping Rate:	(ml/min)	100	W	later-Qualit	y Meter Type	YSI-	556 & Ha 2100P	ch	рН	DO	Cond.	-	ORP
Total Volume Removed:	(gal)	1.45		D	id well go dry	: Yes	No)	∀ 0.1	∀ 10%	∀ 3.0%	A	10 r
Total Totalio Homoroa.	(90.)	1.73			io nei go di)		<u> </u>						
	1	. 2	3	4	5.	6	7	8	9	10		1	
Time:	1315	1320	1325			1340	1345	1350	1355	140	NAME OF TAXABLE PARTY.	52,	
Volume Purged (L)	11	1.5	2	2.5	3	3.5	4	4.5	5	5.5			
Rate (mL/min)	100	100	100	100	100	100	100	100	100	100	Court Inches	1	
Depth to Water (ft.)	9.33	9.33	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34			
pH	6.65	6.63	6.63	6.63	6.63	6.62	6.64	6.64	6.63	6.60	1		
Temp. (C)	20:36	20:30	20.23	20.2	3 20.17	20.17	20.30	20.18	20.03	20.1	0		
Conductivity (mS/cm)	1.118	1.109	1.103	1.106	1.103	1.102	1.099	1.101	1.101	1.100)		
Dissolved Oxygen 75	1.99	2.36	1.39	.97	.79	.70	.60	.55	.48	.45			
ORP (mV)	109.1	112.3	112.8	113.1	113.1	113.5	112.9	113.2	117.9	112.2			
Turbidity (NTU)	187	.63	.54	,53	.65	.57	.52	,55	.71	.57			
Notes:													
Pump on @: 4 Purge Water Description				હે 144	Anal	yses	# of Contain	ners Ar	nalyses		# o Co		ners
Initial Purge: Clear				bidity	TOCs (40 ml with l	H ₂ SO ₄)	2	All	lloride, Sulfa calinity. 50 ml)	ite, &	1		
Final Purge: Clear	nood	lor, la	ow to	rbidit	USS DL Poly)		, 1	To	tal Metals 50 ml with H	NO ₃)	1		
Well Integrity Informatio				Ţ	PCBs (Total (Amber))	2	TD			1		
Surface Seal Condition (con	ncrete pad, be	olts, manho	le cover): C	good		INC	LUDE OVER			UNT TOT	ALS		
Locking Protective Well Ca	ap/expansion	plug: 90	od		Sample ID:	TSU	0017		San	nple Time:	1400	1	
Well Lock Present? YLS	Lock Condi	tion: 90	od		MS/MSD:	Yes	6	Duplic			1700)	
Other:					Duplicate ID):			Dup	. Time:			
OVERSIGHT SAMPLE	D: PGW	-MWIZ	OTIME	1400	Sampled By	-Λ	nlass	Log R	eviewed By:				
- PGW - MWIZ			101	100	All samples	submitted u	nder COC to	TAL of Sou	uth Burlingto	n, Vermor	nt.		
5 - PRM - WN17	- 02												

GROUNDWATER SAMPLING LOG

Sampling Personnel:	. O'Ne	il					Well ID: N	1W-13	3				
Client / Job Number:		9.0000 Tas	k 00500				Date: 6	-30-0					
Weather: 63° OV	crcast						Time In: C	2915	Time	Out:	05		
Well Information	(feet) C	1.12			-	Well Type							1
Depth to Water.	(feet) (feet) (5.00		(TIC)		Well Type:			Flushmo	.1	St	ick-Up	<u></u>
Total Depth: Length of Water Column:		5.88		(TIC)		Well Mater		S	tainless Ste		,	PVC	
Volume of Water in Well:	(gal)	95				Well Locke			Y	es 🗸		No	Ш,
Three Well Volumes:		2.87				Measuring	Point Mark	ed:	Y	es 🗆		No	
Purging Information	13-7					Well Diam	eter:	1"		2" √	Other:		
Purging Method:	Barnant [¬ Ge	eoPump	V s	Submersible	Othe	r:			Conver	sion Fac	tors	
(Peristaltic Pump) Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	□ Othe			gal / ft.	1" ID	2" ID	4" ID	6" ID
	Barnant		GeoPump	□ S	ubmersible	LY			of water	0.041	0.163	0.653	1.469
Sampling Method:		11-	Octor ump	S	ubmerolbie	Othe	r.		1 gal = 3	.785 L =37	85 ml = 0.	1337 CL	bic feet
Duration of Pumping:	(min)	40				VCI	EEG 9 LIG	oh.	Unit Sta	bility, WI	TH TURB	IDITY -	<5 NTU
Average Pumping Rate:	(ml/min)	100	W	/ater-Qualit	y Meter Type	: 131-	556 & Ha 2100P	icii	pН	DO	Cond		ORP
Total Volume Removed:	(gal)	1.05		D	id well go dry	: Yes	No		∀ 0.1	∀ 10%	∀ 3.0	% \	10 mV
	1 1	2	3	4	1 5	6	7	8	9	Т.	0	11	12
Time:	0930	0935	0940	0945		0955							
Volume Purged (L)	1	1.5	2	2.5	3	35	4						/
Rate (mL/min)	100	100	100	100	100	100	100	COA M		Title			/
Depth to Water (ft.)	1300	914	914	9.14	9.14	9.14	9.14					/	
pH	7 24	721	7.22	7.24	7.25	7.25	7.25			100	1		
Temp. (C)	12.98	12.58	12.40	12.28		12.12	12.13			1/4	1		
Conductivity (mS/cm)	.898	832	.816	799	793	.790	.787			107	4		
Dissolved Oxygen 😘	1.87	,50	.40	,56	153	.47	145		/	/			
ORP (mV)	-69.7	-72.6	-64.7	-76.9	-79.9		85.0		/				
Turbidity (NTU)	12.6	4.13	2.71	144	1.68	2.97	1.31	/					
Notes:	12.0	1.15	L. / 1	1.73	1.60	06.11	1.31	/					
mp on @ 09	20 P	omp o	ffe 11	00	Anal	vses	# of	Aı	nalvses			# of	
Purge Water Description	(Color? Ode	or? Turbid:	? Other?)				Contai	ners	nloride, Sulf	ate &		Conta	ners
Initial Purge: Claar	, no a	dor, li	ow tu	real	TOCs (40 ml with I	H₂SO₄)	4	All	kalinity. 50 ml)	ate, u	Z	_	
Final Purge: Clear,	100	dor, la	ow tur	bidity	TSS (I L Poly)		2		ital Metals 50 ml with h	INO₃)	Z	2	
Well Integrity Information	1				PCBs (Total (Amber))	4	(2)	OS 50 ml)		7	,	
Surface Seal Condition (cor	icrete pad, b		INC	LUDE OVER	RSIGHT SP	LIT IN AMO	OUNT TO						
Locking Protective Well Ca	p/expansion	plug: 90	od		Sample ID:	T/11	A-75		Ço.	mple Time	. 10	00	
Well Lock Present? VCS	Lock Condi	ition: apo	d		Sample ID: T540070 Sample Time: 1000 MS/MSD: Yes No Duplicate: (es No								
Other:		7			Duplicate ID	TOU	2071		Du	p. Time:	100	0	
OVERSIGHT SAMPLE I	D:		TIME		Sampled By		1500	Log R	eviewed By		100	, 0	
OVERSION I SAIM LE I			NI	TO SELECT THE PARTY OF	Sampled by	. / !		Login	CAICAACO D				

GROUNDWATER SAMPLING LOG

Spring 2009 EVENT

Sampling Personnel:	1. KOHA	GEN T	1- 00500	_			Well ID:	29 09	1				
Client / Job Number:	A	7.0000 Tas	CONTRACTOR OF STREET					100)	Time	Out: N	555		
Weather: 10 F	PARTY	Cron	18, W.	NOY			Tittle iii. [-	190	Time	Out.	237		
Depth to Water:	(feet)	6.8	7	(TIC)		Well Type			Flushmo	ant 🗆	S	tick-Up	1
Total Depth:	(feet)	11.6	0	(TIC)		Well Mate	rial:		Stainless Ste	el √		PVC	
Length of Water Column:	(feet)	4.7	3			Well Lock	ed:		,	es . 🗆		No	
Volume of Water in Well:	(gal)	0.	17			Measuring	Point Marke	ed:	Y	es 🗆		No	
Three Well Volumes:	(gal)		31	.1116	- 110	Well Diam	eter:	1*		2° √	Other:	THE WHOLE IS	
Purging Information	1	O AMO	H B	1415									
Purging Method:	Barnant	CONTRACTOR AND ADDRESS OF THE PARTY.	eoPump [/	Submersible	☐ Othe	r			Conve	sion Fac	ctors	
(Peristaltic Pump)	Silicone	Po	lyethylene		Teflon				gal / ft.	1" ID	2* ID	4° ID	6* ID
Tubing Material:		Ц		19		Othe			of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant	Ц	GeoPump	S	ubmersible	Othe	er:		1 gal = 3	.785 L =37	785 ml = 0).1337 cu	bic feet
Duration of Pumping:	(min)	90	3						Unit Sta	bility, WI	TH TUR	BIDITY <	5 NTU
Average Pumping Rate:	(ml/min)	10	o w	later-Quality	y Meter Type	YSI-	-556 & Ha 2100P	ich	pH	DO	Con		ORP
Total Volume Removed:	(gal)	2.3		Di	id well go dry	Yes	21001	7	∀ 0.1	∀ 10%	∀ 3.0	0% ∀	10 mV
Total Folding Nombred:	(gui)	L. 2	0		io iion go ar,								
	1	2	3	4		6	7		B 9		10	11	1
Time:	1425	1430	1435	1440	1445	1450	1455	1. S. A. S.		+-		32	
Volume Purged (L)	1.00	1.50	2.00	2.50	3,00	3.50	4.00		1				
Rate (mL/min)	100	100	100	100	100	100	100			1	1/		
Depth to Water (ft.)	6.87	6.87	C.87	6.87	6.87	6.87	6.87		/	1/2	r		
pH	7.89	7.85	7.77	7.75	7.71	7.69	7.68		/N	JA)			
Temp. (C)	14.15	13.88	1357	1349	13.45	13.35	13.33		1/1/1/1	1/			
Conductivity (mS/cm)	0.705	0.705	0.707	0.707	70.707	0.709	0.710		K	/			
Dissolved Oxygen	1.05	(.08	0.46	0.36	032	0.33	0.34						
ORP (mV)	-72.1	-74.0	-74.2	-68.0	-50.4	-55.8	-54.2	/					
Turbidity (NTU)	407	3.13	285	261	276	2.66	2.51	/					
Notes:		1											
							# of				1	# of	
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anai	yses	Contai	ners	Analyses			Contai	ners
Initial Purge: CLEAR,	No 00	ne.			TOCs	u.co.\	2	100	Chloride, Sulf Alkalinity.	ate, &	,		
					(40 ml with	H ₂ SU ₄)			(250 ml) Total Metals		- 1		
Final Purge: CLGAR	. Po c	DOE			(I L Poly)		1		250 ml with I	HNO ₃)	- 1		
Well Integrity Information	<u>on</u>		PCBs (Tota (Amber)	1)	2 :	THE RESERVE TO SERVE	TDS (250 ml)		1				
Surface Seal Condition (co	2000		INC			PLIT IN AMO	OUNT TO	TALS					
ocking Protective Well C	-		INC	LUDE OVE	SIGHT 3	A LII IN AMI		IALS					
		Sample ID:	T540	1018			mple Tim	e: \1	455				
Well Lock Present?		MS/MSD: Yes No Duplicate: Yes											
Other: YES		Duplicate ID: Dup. Time:						+	ALE .				
OVERSIGHT SAMPLE	ID:		TIME	:	Sampled By	Г	3/K	Log	Reviewed B		7		
PlA			NA		Sampled by. MFK Log Reviewed by. MFK								

Kalamazoo River Study Group – Plainwell TCRA

GROUNDWATER SAMPLING LOG

	MFK							W-15					
Client / Job Number: Weather: 60°5		9.0000 Tas	a surround of the same					30/09	Time	Out: 17	20		
Weather: 60°S	oveccas t	1 1100	WWD				Time In: O	945	Time	Out: 11	20		
Depth to Water:	(feet)	7.92		(TIC)		Well Type:			Flushmo	unt 🗆	SI	ick-Up	
Total Depth:	(feet)	7.13	14.50	(TIC)		Well Mater	rial:	8	stainless St	eel V		PVC	
Length of Water Column:	(feet)	1.20	6.58	.		Well Locke	ed:			res 🔛		No	
Volume of Water in Well:	(gal)	0.20	1.07			Measuring	Point Marke	d:		res 🖳		No	
Three Well Volumes:	(gal)	0.60	3.21			Well Diame	eter:	1"	0 (
Purging Information	Pom	00 P	0 100	00	off B	1120				2" JV			
Purging Method: (Peristaltic Pump)	Barnant	Ge	eoPump	S	ubmersible	Othe				T	sion Fac		1
Tubing Material:	Silicone	☐ Po	lyethylene		Teflon	Othe	r.		gal / ft. of water	1" ID 0.041	2° ID 0.163	4" ID 0.653	1.46
Sampling Method:	Barnant		GeoPump	Su	ubmersible	Othe	r:		1 gal = 3	3.785 L =37			
Duration of Pumping:	(min)	120							11-11-01	- Luit	FL1 71:0-	UDIT!	
Average Pumping Rate:	(ml/min)	100	w	ater-Quality	Meter Type	YSI-	556 & Ha	ch	pH	ability, WIT	Cond		ORP
							2100P		∀ 0.1	∀ 10%	∀ 3.0		/ 10 m
Total Volume Removed:	(gai)	3.17		Ul	d well go dry:	Yes	No		•				
	1	2	3	4	5	6	7	8	9) 1	10	11	
Time:	1010	1015	1020	1025	1030	1035	1040						
Volume Purged (L)	1.00	1.50	2.00	2.50	3.00	3.50	4.00		:				
Rate (mL/min)	100	100	100	100	100	100	100					/	
Depth to Water (ft.)	7.93	7.93	7.93	7.93	7.93	7.93	7.93				/		
pH	7.33	7.34	7.34	7.34	7.34	7.33	7.35			1./x	2		
Temp. (C)	11.94	11.92	11.98	11.93	11.90	11.97	11.89			(DAP	1		
Conductivity (mS/cm)	0.799	0.790	0.782	0.773	0.762	0.761	0.762		,	N			
Dissolved Oxygen	0.95	0.60	0.41	0.46	0.42	0.40	0.39		/				
ORP (mV)	-702	-63.5	-59.3	-48.3	-49.7	-51.4	-51.7	/					
Turbidity (NTU)	5.50	4.07	3.36	2.38	1.93	1.45	1.13	/					
Notes:						die, las							
Purge Water Description	(Color? Od	or? Turbid	2 Othor?)		Anal	yses	# of Contain	ners A	nalyses			# of Contai	iners
	100 C		. Other . j		TOCs (40 ml with I	H ₂ SO ₄)	2	A	hloride, Sul kalinity. 50 ml)	fate, &	1		
Cinal Purge: CLEAR	100	Dop			TSS (I L Poly)		1	To	otal Metals 50 ml with	HNO ₃)	1		
Vell Integrity Information		PCBs (Total (Amber))	2	T	DS :50 ml)	3/	1					
surface Seal Condition (co	5000	(Alliber)	INC	LUDE OVER			OUNT TO	TALS					
ocking Protective Well C	ap/expansion	plug: Go	200		Camela ID	6	(FP)					ALIA	
Well Lock Present?		Sample ID: MS/MSD:	1540 Yes	TL 1	Dupli	124	Yes	10	040				
Other:							NA		Di	up. Time:	11	٨	
OVERSIGHT SAMPLE	ID:		TIMĘ		Duplicate ID Sampled By		1-11-	Logs	Reviewed E	lv:		-1	
P/A P/A					Jumpicu by	AA		Logi	TAICMEN D	J. 4/11	V		

Kalamazoo River Study Group – Plainwell TCRA,

GROUNDWATER SAMPLING LOG

Summer Spring 2009 EVENT

Plainwell, Michig		2.1						N Q	5/-	_			
Sampling Personnel: Client / Job Number:	P006452	たト 1.0000 Tas	k 00500					0/29/0	56-	>			
Weather: 70°F								300	Time	Out: /3	3.30		
Well Information													
Depth to Water:	(feet)				C)	Well Type	E		Flushmo	unt 🗆	St	ick-Up	1
Total Depth:	(feet)				(C)	Well Mate	rial:		Stainless St	eel V		PVC	
Length of Water Column						Well Lock	ed:			res , 🗌		No	
Volume of Water in Well:						Measuring	Point Mad	ked:		es 🗆		No	
Three Well Volumes:	(gal)					Well Diam	eter:	1	· 🛮	2. √	Other:		
Purging Information													
Purging Method: (Peristaltic Pump)	Barnant	Ge	oPump [Submersible	Othe	er:			1	sion Fac		
Tubing Material:	Silicone	Pol	lyethylene		Teflon	Othe	er.		gal / ft. of water	1* ID	2° ID 0.163	4° ID 0.653	6° ID
Sampling Method:	Barnant		GeoPump		Submersible	Othe	er.		1 gal = 3	3.785 L =37			
Duration of Pumping:	(min)		_	Terral P									
Average Pumping Rate:	(ml/min).	/	V	Vater-Qu	ality Meter Typ	YSI	-556 & H 2100P	ach	pH	bility, Wi	Conc		ORP
Total Volume Removed:	(gal)			437	Did well go di	ry: Yes	2100P	0	∀ 0.1	∀ 10%	∀ 3.0	% ∀	10 mV
Time:	1310	2	3		4 5	6	7		8 9	1	10	11	
Volume Purged (L)				749		1			V.			500	
Rate (mL/min)	-												
Depth to Water (ft.)				1									
pH	8.38							1. 1,					
Temp. (C)	23.45												
Conductivity (mS/cm)	0.622							10000					
Dissolved Oxygen	8.24												
ORP (mV)	88.0												
Turbidity (NTU)							3/8/16						
Notes:	103												
Purge Water Descriptio	n (Color? Ode	or? Turbid	? Other?)		Ana	alyses	# of Conta	iners	Analyses			# of Conta	iners
Initial Purge:	<u> </u>		/		TOCs (40 ml with	n H ₂ SO ₄)	2		Chloride, Sul Alkalinity.	fate, &	1		
Final Purge:		/			TSS (I L Poly)		1		(250 ml) Total Metals (250 ml with	HNO ₁)	1		
Well Integrity Informat	ion /				PCBs (Tot (Amber)	ai)	2		TDS (250 ml)		1		
Surface Seal Condition (c	concrete pad, b	olts, manho	le cover):		(INC	LUDE OVE		SPLIT IN AM	OUNT TO	TALS		
Locking Protective Well	eap/expansion	plug:			Sample ID					imple Time			
Well Lock Present?	Lock Condi	ition:			MS/MSD:	153 Yes	1003	Dug	plicate:	Yes	63	10	
Other:					Duplicate	ID:			Di	p. Time:			
OVERSIGHT SAMPLE	E ID:		TIME	:	Sampled E		/	Log	Reviewed B		1/		
					All comple	s submitted t		- TH	Court Durine	1.1	K		

Kalamazoo River Study Group – Plainwell TCRA,

GROUNDWATER SAMPLING LOG

Sampling Personnel:	M. KOHAGE						Well ID:		3 56-5				
Client / Job Number:	B0064539.0	0000 Task 0	0500				Date: 7	2/00	Time	Out			
Well Information	OVERCAST		V ne				Time III. 1	320	Time	Out.			
Depth to Water:	(feet)			(TIC)		Well Type			Flushmo	unt 🗆	5	Stick-Up	1
Total Depth:	(feet)			(TIC)		Well Mate	rial:		Stainless Ste	eel V		PVC	
Length of Water Column:	(feet)					Well Lock	ed:		Y	res 🗆		No	
Volume of Water in Well:	(gal)					Measuring	Point Marke	ed:	Y	′es 🗆		No	
Three Well Volumes:	(gal)					Well Diam	eter:		ı• 🗆	2" √	Other		
Purging Information Purging Method:		00		0.1						Conver	sion Fa	ctore	
(Peristaltic Pump)	Barnant	GeoP	nmb	Suc	omersible	Othe	er.		201/9	1" ID	2° ID	4" ID	6" ID
Tubing Material:	Silicone	Polyet	hylene		Teflon	Othe	er:		gal / ft. of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant	Geo	Pump	Sub	mersible	Othe	er:		1 gal = 3	3.785 L =37	85 ml =	0.1337 c	ubic feet
Duration of Pumping:	(min)								Unit Sta	bility, Wi	TH THE	BIDITY	<5 NTII
Average Pumping Rate:	(ml/min)		Water	-Quality N	Meter Type	YSI-	-556 & Ha 2100P	ch	pH	DO DO	Cor		ORP
Total Volume Removed:	(gal)			Did	well go dry	r: Yes	No		∀ 0.1	∀ 10%	∀ 3.	0%	√ 10 mV
	1 1	2	3	4	-		7		0 0		10.1	11	12
	1	2	3	4	5	6	7		8 9		10	11	12
Time: Volume Purged (L)	1030												
Rate (mL/min)													
Depth to Water (ft.)										-			
pH	8.06												
Temp. (C)													
Conductivity (mS/cm)	18.75												
Dissolved Oxygen	0.611												
ORP (mV)	111.4												
Turbidity (NTU)	875												
Notes:	8.75												
							# of			1		# of	
Purge Water Description	(Color? Odor?	Turbid? O	ther?)		Ana	lyses	Contain	ners	Analyses			Conta	iners
Initial Purge:					TOCs 40 ml with	H ₂ SO ₄)	8		Chloride, Sulf Alkalinity. (250 ml)	fate, &	4		
Final Purge:					SS I L Poly)		4		Total Metals (250 ml with I	HNO ₃)	4		
Well Integrity Informati	on			P	CBs (Tota Amber)	1)	8		TDS (250 ml)		4		
Surface Seal Condition (co	oncrete pad, bolt	s, manhole c	over):	-	unicery	INC	LUDE OVER	RSIGHT	SPLIT IN AM	OUNT TO	TALS		
Locking Protective Well C	Caplespansion pl	ug		-	Sample ID:					imple Time		70	
Well Look Present?	Lock Conditio	ME:			MS/MSD:	Yes	No	Du	iplicate: (Yes	No No	30	
Other:				0	Duplicate IC	TCZ	1005		Du	ıp. Time:	_	_	
OVERSIONT SAMPLE	ID:		TIME:	S	Sampled By	100	4	Lo	g Reviewed B	y: MM	/		
				A	III samnles	submitted u	nder COC to	TAL of	South Burlingt	on Vorm	not		

ARCADIS

Attachment 3C

Groundwater and Surface Water Sampling Logs – Quarter 3 – September 2009

GROUNDWATER SAMPLING LOG

Sampling Personnel:	1. Konno							W-1					
Client / Job Number:		9.0000 Tas						Z/09		0.4	C		
Weather: 80 F C	weecast	CALA					Time In: 1	400	Time	Out: 1.	540		
Depth to Water:	(feet)	8.54		(TIC)	gara.	Well Type:			Flushmo	unt 🗆	Stic	k-Up	$\sqrt{}$
Total Depth:	(feet)	12.72	<u></u>	(TIC)		Well Mater	ial:	s	tainless Ste	eel √		PVC	
Length of Water Column:	(feet)	4.18	<u>a</u>		_	Well Locke	ed:		Y	es 🖭		No	
Volume of Water in Well:	(gal)	0.6				Measuring	Point Marke	d:	Y	es 1		No	
Three Well Volumes:	(gal)	2.04	or or		- 4	Well Diame	eter:	1"		2° √	Other:		
Purging Information	PUMP	an O	1420	of	FO15	30							
Purging Method: (Peristaltic Pump)	Barnant [] Ge	eoPump [s	Submersible	Other				1	sion Facto	ANDERTHAL	T
Tubing Material:	Silicone	Po	lyethylene		Teflon	Other			gal / ft. of water	1° ID		4" ID 0.653	6" ID
Sampling Method:	Barnant		GeoPump	S	ubmersible	Other			1 gal = 3	.785 L =378			
Duration of Pumping:	(min)	70							U-14 C4-	Line Inn	TI TUDDU	nm/	ar Nitil
Average Pumping Rate:	(ml/min)	100	, v	/ater-Quality	y Meter Type		556 & Had	ch	pH pH	bility, WIT	Cond.	JIIY.	ORP
T	4 - 0						2100P		∀ 0.1	∀ 10%	∀ 3.0%	\ \ \	10 mV
Total Volume Removed:	(gal)	1.85		Di	id well go dry	: Yes	(Ng)						
	1	2	3	4	5	6	7	8	9	1	0	11	1:
Time:	1430	1435	1440	1445	1450	1455							
Volume Purged (L)	1.00	1.50	2.00	2.50	3,00	3.50							
Rate (mL/min)	100	100	100	100	100	100							
Depth to Water (ft.)	8.55	8.55	8.55	8.55	8.55	8.55					/		
pH	7.56	7.50	7.50	7.50		7.52				./			
Temp. (C)	17.06	16.70		- 16.46	16.41	16.47			M	K			
Conductivity (mS/cm)	0.932	0.931	0.931	0.931	0.930	0.934			X				
Dissolved Oxygen	0.23	0.21	0.21	0.17	0.15	0.14		/					
ORP (mV)	-29.1	-34.4	-38.3	-39.9	-41.4	-45.5		/					
Turbidity (NTU):	11.34	6.20	5.12	4.33	3.42	2.87	1						
Notes:					A.								
D W. to D i. di	(Cal2 Od-	9 T 111	2.04 - 2)		Anal	yses	# of Contain	ere Ar	nalyses			of ontai	ners
Purge Water Description			(Otner:)		TOCs			Ch	loride, Sulf	ate, &	,	Ontai	11015
Initial Purge:	L, No	100			(40 ml with I	H ₂ SO ₄)	2	(25	(alinity. (0 ml)				
Final Purge:		11			TSS (I L Poly)				tal Metals 0 ml with H	łNO₃)	1		
Well Integrity Information	o <u>n</u>				PCBs (Total (Amber))	2 -	TD (25	S 50 ml)		1		
Surface Seal Condition (co	ncrete pad, be	olts, manho	le cover):	000		INCL	UDE OVER			OUNT TOT	ALS		
Locking Protective Well Ca	ap/expansion	plug: Goo	p		Sample ID:	Teller	47		Sai	mple Time:	14	55	
Well Lock Present?	Lock Condi	tion: Goeo		-	MS/MSD:	T 3400	(N)	Duplic			(No)	.2	
Other:					Duplicate ID	·	m/A		Du		MA		
OVERSIGHT SAMPLE	D:		TIME		Sampled By			Log R	eviewed By		0/		
No	re				All samples	submitted un		TAL of Sou	th Budings	on Vermo	rk nt		
100				L	- Jumpico		-5. 555 10		Julingo	FOITIOI		Sell.	

GROUNDWATER SAMPLING LOG

Sampling Personnel: Client / Job Number:	B006453	9.0000 Ta	sk 00500				Well ID: Mk Date: タクスス	09		- maile		11-13	
Weather: 70° F	OVERCAST	, CAL	n				Time In: 110	Ġ	Time	Out: -	155	1230	2
Depth to Water:	(feet)	11.76		(TIC)		Well Type			Flushmou	ınt 🗆	S	tick-Up	1
Total Depth:	(feet)	15.10		(TIC)	_	Well Mate	rial:	s	tainless Ste	el √		PVC	
ength of Water Column:	(feet)	3.34			<u>.</u>	Well Lock	ed:		Y	es 🗜	-	No	
/olume of Water in Well:	(gal)	0.54			-	Measuring	Point Marked:		Y	es 🗗		No	
Three Well Volumes:	(gal)	1.62			-	Well Diam	eter:	1"		2° V	Other:		
Purging Information	Pump a	D 110	S	1210						-			
Purging Method: Peristaltic Pump)	Barnant	G	eoPump	1 5	Submersible	Othe	r.			T	sion Fac		T
Tubing Material:	Silicone	Po	olyethylene		Teflon	Othe	r.		gal / ft. of water	1" ID	2" ID 0.163	4" ID 0.653	6" ID
Sampling Method:	Barnant	Π.	GeoPump	B S	ubmersible	Othe	r.		1 gal = 3.	785 L =37	785 ml = 0		
Duration of Pumping:	(min)	65							Unit Sta	hilih, W	TH TURE	NOITY 4	es NTII
verage Pumping Rate:	(ml/min)		v	Vater-Qualit	ty Meter Type	YSI-	556 & Hach		pH pH	DO DO	Cond	-	ORP
	1	•					2100P		∀ 0.1	∀ 10%	∀ 3.0	SEASON BUTTON	10 mV
Total Volume Removed:	(gal)	1.72		ь	id well go dry	: Yes	(Nð)						
	1115	2	3	4		6	7	8	9		10	11	1
Time: olume Purged (L)	1115	1128	1125	1130	1135	1140							/
ate (mL/min)	1.00	1.50	100	2.50	-	3.56							
epth to Water (ft.)		-	11.77	100	11 27	106					/		
H	11.77	11.77	7.02	7.09	7.11	11.77			/				
emp. (C)	7.00	7.13			10.1	7.14			V.14	1)			
conductivity (mS/cm)		16.56	16.68	16.68	16.56	TO THE PROPERTY OF THE PARTY OF		-/	WV	/			
	1.136	1.131	1.133	1.135		1.138		V	11/				
bissolved Oxygen	-94.2	0.24	0.29	-98.7	0.23	0.25		1					
RP (mV)		-96.6	-97.1	-	-99.6	-98.8							
urbidity (NTU) lotes:	27.92	4.38	3.64	3.14	282	3.17							
		<u> </u>											
W Dii	(C-12 O)		9.049)		Anal	lyses	# of Container	_e Ai	nalyses			# of Contai	inere
rge Water Description			: Other:)		TOCs				nloride, Sulf	ate, &			
tial Purge: CUA	R, No	DOCK			(40 ml with	H ₂ SO ₄)	2		kalinity. 50 ml)			1	
nal Purge:	11				TSS (I L Poly)		1		otal Metals 50 ml with h	INO ₃)	1		
ell Integrity Information	<u>on</u>				PCBs (Total (Amber)	I)	7	TE	Maria de la colonia de la	- 5/	1		
face Seal Condition (co	oncrete pad, b	olts, manho	le cover): (G000	(v univer)	INC	LUDE OVERSION			UNT TO	TALS		
cking Protective Well C	ap/expansion	plug: Co	•0										
ell Lock Present?	Lock Cond	_			Sample ID:	TS40	039	Duplic		mple Tim Yes	e: ·	140	
her:					MS/MSD:								
VERSIGHT SAMPLE	ID:		TIME		Duplicate ID	MA		I or P	Du Reviewed By	p. Time:	N/A		
					Sampled By	lal 1 Lo	nagen			146	K_		
					All samples	submitted u	nder COC to TA	L of So	uth Burlingt	on, Verm	ont.		World View

GROUNDWATER SAMPLING LOG

Sampling Personnel:	S. Har	cus						1W-3				
Client / Job Number:		9.0000 Ta					Date: 9	122/09				
Weather: Overca	st, fogo	14 - AN	hours				Time In: C	9845	Time (Out: 105	50	
Well Information					-							
Depth to Water:	(feet)	10.6		(TIC)	72	Well Type		X 1538	Flushmou	nt 🗆	Stick-Up	10.000
Total Depth:	(feet)	3.0		(TIC)		Well Mate	rial:	S	tainless Ste	el 1	PVC	
Length of Water Column:	(feet)	0.				Well Lock	ed:		Y	es 🔀	No	
Volume of Water in Well:	(gal)	1.1			-	Measuring	Point Mark	ed:	Ye	es 🗶	No	
Three Well Volumes: Purging Information	(gal) Pumi	on a	7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		-	Well Diam	eter:	1°		2* √ (Other:	
Purging Method:	Barnant		eoPump 🔭	/ s	Submersible	☐ Othe	r			Conversion	on Factors	
(Peristaltic Pump)	Cilionno		huothulono	7	Teflon				gal / ft.	1" ID :	2° ID 4° ID	6" ID
Tubing Material:	Silicone		olyethylene	Ц	Tellon	Othe	er.		of water	0.041	0.163 0.653	1.469
Sampling Method:	Barnant		GeoPump	X s	ubmersible	Othe	er.		1 gal = 3.	785 L =3785	5 ml = 0.1337 c	ubic feet
Duration of Pumping:	(min)	115							Unit Stal	bility WITH	I TURBIDITY	<5 NTU
Average Pumping Rate:	(ml/min)	100	v	/ater-Qualit	y Meter Type	e: YSI-	-556 & Ha	ach	pH	DO	Cond.	ORP
T-(-1)/-1	(naD	2.4			:dell ee de	Y	2100P	5	∀ 0.1	∀ 10%	William Co.	√ 10 mV
Total Volume Removed:	(gal)	3.04			id well go dr	y: Yes	(NC					
Time:	1	2	3	4	5	6	7	8	9	10	11	12
Volume Purged (L)	0922	0927	0932	0937	0942	0947	0952	0957	1002	1007	1012	1017
Rate (mL/min)	100	100	100	100	100	100	100	100	100	100	100	100
Depth to Water (ft.)	10,68	10.67	10.68'	10.68		The state of the designation	10.68	10.68	1 1000 0000	10.67		10.67
pH	6.90	6,99	7.02	7.03	7.04	7.05	7.05	7.05	7.06	7.06	7.07	7.06
Temp. (C)	16-59	16.37		The Paris of the P	16.30	16.32	16.36		A CONTRACTOR OF THE PARTY OF TH	16.42		
	1.120	1.121	1.121	16.29	 	A 10.0000000000	1.121	16.36	1.122		THE RESERVE OF THE PARTY OF THE	16.43
Conductivity (mS/cm)		-		1.121	1.121	1.121		1.122		1.123	1.123	TOTAL STATE
Dissolved Oxygen /L	0.45	0.32	0.25	0.27	0.36		0.48	0.35	0.32	0.22	0.17	0.19
ORP (mV)	-18.9	-27.7	-22.7	-28.0	+39.2	11.1	-49.3	-51.4	-52.3	-53.3		-55.3
Turbidity (NTU)	54.75	35.72	24.98	18.17	11.43	11.79	7.59	5.91	5.13	4.27	2,23	1.82
Notes:					-							
Purge Water Description	(Color? Od	or? Turbid	2 Other?)		Ana	lyses	# of Contai	iners A	nalyses		# of Conta	ainers
	MENCHEN VIOLENCE AND AND		. Cimerij		TOCs (40 ml with	H ₂ SO ₄)	2	Al	hloride, Sulfa kalinity. 50 ml)	ate, &	1	
inal Purge: Clear	No od	ter			TSS (I L Poly)		1	To	otal Metals 50 ml with H	INO ₃))	
Well Integrity Information					PCBs (Total (Amber)	al)	. 2	TI	DS 50 ml)		1	
Surface Seal Condition (cor	ncrete pad, b	olts, manho	ole cover): (roud.	(Alliber)	INC			LIT IN AMO	UNT TOTA	AI S	
ocking Protective Well Ca	ap/expansion	n plug: Go	d.					NOIGHT OF				
Well Lock Present? Ues.	Lock Cond	lition:	od.		Contract of the second	T5400)37 (NO)	Dupli		mple Time:	1024	
Other:		000			MS/MSD:			Supir			1/4	
OVERSIGHT SAMPLE I			TIME		Duplicate II	17/7		Local	Dup Reviewed By	p. Time:	VA.	
	versight	Solit !	Sample			8.140	avers					
140 01	John Cine	Mul 2	1		All samples	submitted u	inder COC t	o TAL of So	outh Burlingto	on, Vermon	t.	

GROUNDWATER SAMPLING LOG

Sampling Personnel:	1. CONAGE		00500				ate:	MW-4	9				
Client / Job Number:		.0000 Tasl					ime In:	1500		Time O	d- 10	55	
Weather: 75 F	PARTLY	CLOUDY	, MOD L	ZIMD	_		inte in.	150					
Depth to Water:	(feet)	1222		(TIC)		Well Type:			Flu	shmoun	t 🗆	Stick-	Up √
Total Depth:	(feet)	14.44		(TIC)	*	Well Materi	al:		Stainle	ess Steel	1 1	/ P	vc 🗆
ength of Water Column:	(feet)	2.22	idana.		_	Well Locke	d:			Yes	S 9	/	No 🗆
Volume of Water in Well:	(gal)	1.09				Measuring	Point Ma	arked:		Yes		-	No 🗆
Three Well Volumes:	(gal)					Well Diame	eter:		1" 🗌		2″ √	Other:	
Purging Information	PUMP C	NO	1510	eff	@164	5							
Purging Method: (Peristaltic Pump)	Barnant [Ge	oPump [Sı	ubmersible	Other	:		-	T	1' ID	2" ID 4"	ID 6° ID
Tubing Material:	Silicone	Pol	yethylene		Teflon	Other				al / ft. water	0.041		653 1.469
Sampling Method:	Barnant		GeoPump	Su	bmersible	Other	:		1	gal = 3.7	85 L =378	5 ml = 0.133	37 cubic feet
Duration of Pumping:	(min)	Q !	5							nit Stabi	ilita, VA/IT	u TI IPRIDI	TY <5 NTU
Average Pumping Rate:	(ml/min)	1~) W	ater-Quality	Meter Type		556 &			pH	DO DO	Cond.	ORP
		100	1		686		2100F	NQ	-		∀ 10%	∀ 3.0%	∀ 10 mV
Total Volume Removed:	(gal)	2.	21	Di	d well go dry	Yes	(<u></u>					
	1	2	3	4	5	6		7	8	9	10	0 1	1 1
Time:	1520	1525	1530	1535	1540	1545		100					
Volume Purged (L)	100	1.50	200	2.50	3.00	3.06	- 18						
Rate (mL/min)	100	100	100	100	100	100							
Depth to Water (ft.)	12.22	12.23	12.23	1223	12.23	2.23							
pН	6.98	6.88	6.90	4.95	6.98	7.02							
Temp. (C)	18.19	17.90	17.97	17.87	17.95	18.07			1	ASC			
Conductivity (mS/cm)	1.131	1.136	1.134	1.135	1.139	1.140				- C	/		
Dissolved Oxygen	0.37	0.31	0.28	0.27	0.27	0.25							
ORP (mV)	-61.4	-59.5	-63.1	-68.9	-72.3	-74.4							
Turbidity (NTU)	10.70	4.75	3.31	4.13	3.21	1.66	-						
Notes:					45								
	(6.1.00)	am 111	0.04 - 0		Ana	lyses	# o Cor	f ntainers	Anal	yses		# c	of ontainers
Purge Water Description	e, po (· Other:)		TOCs (40 ml with	H ₂ SO ₄)	2		Alkalii		ite, &	1	
inal Purge:		/		i i	TSS (I L Poly)	1				Metals nl with H	NO ₂)	1	
Well Integrity Informati	on (PCBs (Tota	1) 2	+1	CPM	TDS (250 r		// /	,	
Surface Seal Condition (c		olts, manho	le cover):/	1000	(Amber)	INC	_	VERSIGH			UNT TO	TALS	
ocking Protective Well (Sample ID:						nple Time		
Well Lock Present?		7 16 16 17			MS/MSD:	1540 Yes	035	,	Duplicate		Yes	154	5
Other:		0.)·	1.	,		Dur	o. Time:	. 1.	
OVERSIGHT SAMPLE	ID:		TIMI	C:	Duplicate II Sampled B		A	11	Log Revi	iewed By		NA	
			1545			submitted u						ont	
PGW-MW4													

GROUNDWATER SAMPLING LOG

Client / Job Number:		9.0000 Tas						109			515		
Weather: 70°F	PARTLY	CLOUDY	MOD L	SIMP			Time In:	403	Time	Out:)	545		
Depth to Water:	(feet)	H 12.	50	(TIC)		Well Type:			Flushmou	unt 🗆	Stick	c-Up	1
Total Depth:	(feet)		23	(TIC)		Well Mate	rial:	s	tainless Ste	el V		PVC	
Length of Water Column:	(feet)		20			Well Locke	ed:		Y	es 🕱		No	
Volume of Water in Well:	(gal)		36			Measuring	Point Mark	ed:	Y	es 😿		No	
Three Well Volumes:	(gal)		08			Well Diam	eter:	1"	0	2 1	Other:		
Purging Information	PUMP	m 0	1408										
Purging Method: (Peristaltic Pump)	Barnant	Ge	eoPump	∡ s	ubmersible	Othe	er:			T T	sion Facto	rs 4" ID	6" ID
Tubing Material:	Silicone	N Po	lyethylene		Teflon	Othe	er.		gal / ft. of water	1° ID 0.041		0.653	1.469
Sampling Method:	Barnant		GeoPump	N S	ubmersible	Othe	er:		1 gal = 3	.785 L =378			oic feet
Duration of Pumping:	(min)	95		,					Linit Ct	bility, WI7	ru Tubbir	NTV -	E NTI
Average Pumping Rate:	(ml/min	100	V	/ater-Qualit	y Meter Type	YSI	-556 & Ha	ach	pH	DO DO	Cond.		ORP
			• 1				2100P	2	∀ 0.1	∀ 10%	∀ 3.0%	A	10 mV
Total Volume Removed:	(gal)	2.5	• (D	id well go dry	: Yes	No	_					
	1	1402	3	1422	1438	1443	1448	1453	9) 1	0	11	
Time:	1413	1423	1428	1433	3.0	-	4.0	4.5				-	1
Volume Purged (L)	1.00	9.5	2.0	2.5	and the second	3.5				- 49		1	
Rate (mL/min)	100	100	100	100	100	100	100	100			1/	+	
Depth to Water (ft.)	12.04	12.04	12.04	12.04	1	12.04	17.04	S PERSONAL DE LA		1	AK		
pH	6.92	6.96	6,98	7.00	7.07	7.06	7.09	7.10			(1)		
Temp. (C)	18.23	18.10	18.01	18.03	18.10	18.20	18.23	18.04		(2)			
Conductivity (mS/cm)	1.236	1.228	1.223	1.221	1.219	1,217	1.218	1.217		1			
Dissolved Oxygen (%)	3.6	2.8	2.2	2.0	1.6	1.4	1.3	1.3	1	4_			
ORP (mV)	-61.8	-73.3	-81.2	-86.8	-97.2	-104.9	-114.4	-123.9	/				
Turbidity (NTŪ)	5.49	6.71	6.19	4.37	2.35	1.93	1.31	8.55	/				
Notes:									Stabili	zed			
					Ana	lyses	# of Conta	iners A	nalyses			of ontai	ners
Purge Water Description Initial Purge: Clar.			(? Otner?)		TOCs (40 ml with	H CO)	2	C	hloride, Sul kalinity.	fate, &	1		
Final Purge:	No 01	Adar			TSS	112504)		T	tal Metals				
Well Integrity Information		7000			(I L Poly) PCBs (Total	al)	1 -	LI T	50 ml with	HNO ₃)	١,		
Surface Seal Condition (co		bolts, manho	ole cover).	Good	(Amber)		L	COPI	250 ml)		,		
Locking Protective Well C						INC	CLUDE OVE						
Well Lock Present? 4e5.					Sample ID:	1-	MWO		54003			3	
	LUCK COIL	union. G	900.		MS/MSD:	Yes	(No)	Dupi	icate:	Yes	No		
Other:					Duplicate II	D: N	A			up. Time:	MA		
OVERSIGHT SAMPLE PG-W-MWO!			150	0.1	Sampled B	D. H	areus		Reviewed E	WE			
IR An I rago	, ,				All samples	submitted	under COC	to TAL of Se	outh Burling	ton, Verm	ont.		

GROUNDWATER SAMPLING LOG

Sampling Personnel:	5. t	farcus					Well ID:	MW						
Client / Job Number:		9.0000 Tas	sk 00500				Date:	1/22/	09	× 100				
Weather: Overca	st, 66	o to					Time In:	1102		Time (Out: 2	15		
Well Information		11.	,,		-									
Depth to Water:	(feet)	15.8		(TIC)		Well Type:				Flushmou	int 🗆	S	tick-Up	<u> </u>
Total Depth:	(feet)	4.2	1'	(TIC)	-	Well Mater	nal:		St	ainless Ste	el V		PVC	Ш
Length of Water Column: Volume of Water in Well:	(feet) (gal)	0.6				Well Locke	ed:			Y	es 💍		No	
Three Well Volumes:	(gal)	2.00	6		-	Measuring	Point M	arked:		Y	es 🖔		No	
Tillee vveil volumes.	Pump on		7		-	Well Diam	eter:		1"		2* √	Other:		
Purging Information	(2)	1108				336								
Purging Method: (Peristaltic Pump)	Barnant [] Ge	eoPump	X, s	Submersible	Othe	r.				Conve	sion Fac	tors 4" ID	6" ID
Tubing Material:	Silicone	Po Po	lyethylene		Teflon	Othe	r.			gal / ft. of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant		GeoPump	X s	ubmersible	Othe	r.			1 gal = 3.	785 L =37	785 ml = 0).1337 cu	ubic feet
Duration of Pumping:	(min)	65								Unit Sta	hilifu M	TU TUD	DIDITY.	e NTU
Average Pumping Rate:	(ml/min)	160	V	/ater-Qualit	y Meter Type	YSI-	556 &			Unit Sta	DO DO	Con		ORP
	Ç,	Loc	2				2100F	1		γn ∀ 0.1	∀ 10%	∀ 3.0		/ 10 mV
Total Volume Removed:	(gal)	1,7	L	D	id well go dry	: Yes		(No)		V 0.1	V 1076	V 3.0	70 I V	10 1110
	1 1	2	3	1 4	5	6	1	7	8	9	1	10	11	1
Time:	1118	1123	1128	1133	1138	1143	1		Ū					
Volume Purged (L)	1.0	1.5	2.0	2.5	3.0	3.5	1					1	1	
Rate (mL/min)	106	100	100	100	100	100						1		
Depth to Water (ft.)	11.64	11.64	11.64	11.64	11.64	11.64'				Ki	M			
рН	7.17	7.18	7.19	7.19	7.19	7.19	1			N				
Temp. (C)	15.46	15.33	15.46	19.50	15.46	15.44				W.	111			
Conductivity (mS/cm)	1.023	1.023	1.024	1.024	1.025	1.025				X				
Dissolved Oxygen	0.3/	0.28	0.27	0.21	0.18	0.17			/					
ORP (mV)	-84.4	-84.5	-84:4	-84.7	-87.3	-86.9			/					
Turbidity (NTU)	9.37	6.25	5.79	6.44	5.20	3.19		1/						
Notes:							Stabili	ized						
							# 01	-					# of	
urge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses		tainers	An	alyses			Contai	iners
nitial Purge: Clear	, N. O	der			TOCs (40 ml with	H₂SO₄)		7	Alk	loride, Sulfa alinity.	ate, &		1	
	r, No				TSS (I L Poly)			1	To	i0 ml) tal Metals i0 ml with H	INO)		1	
Vell Integrity Informati					PCBs (Total	1)		2	TD	s	11403)		,	
urface Seal Condition (co	oncrete pad, b	olts, manho	le cover):	rood.	(Amber)				1	60 ml)				
ocking Protective Well C									11 52	LIT IN AMO				10
Vell Lock Present? Yes					Sample ID:	T540	The State of the S		Duplic		mple Tim Yes		2	0%.
ther:		000			MS/MSD:	168	No	,	Duplic		499	™		
	m.		TIME		Duplicate ID	IV/P	\				p. Time:	N/A		
No Overs:	alt Split	Sampl	4 TIME		Sampled By	2.40	ircus			eviewed By	MK	K		
110 0.00	MIN.	-6			All samples	submitted u	nder CO	C to TAL	of Sou	th Burlingto	on, Verm	ont.		

GROUNDWATER SAMPLING LOG

Sampling Personnel:	M. KOHA	0000 Tool	00500				Nell ID: 11	22/00				
Client / Job Number:	B0064539	.0000 Tas	UUCUU	-			Time In: ()8		Time	Out: \C	53	
Weather: /0*★ Well Information	Pes Ch	4					mic m. Oe		,,,,,	- T		
Depth to Water:	(feet)	2.10		(TIC)		Well Type:			Flushmou	unt 🗆	Stick	-Up √
Total Depth:		14.68		(TIC)		Well Mater	ial:	s	tainless Ste	el V	_ P	vc 🗆
Length of Water Column:	(feet)	2.58				Well Locke	ed:		Y	es 🕑		No 🗆
Volume of Water in Well:	(gal)	0.42				Measuring	Point Market	d:		es 📝		No 🗆
Three Well Volumes:	(gal)	1.26				Well Diame		1"		2° V	Other:	
Purging Information	POMP OF	0 08	55	OFF) १०५८ -					2 1		
Purging Method: (Peristaltic Pump)	Barnant [oPump	Si	ubmersible	Othe	r.			T	sion Factor	
Tubing Material:	Silicone	Pol	yethylene		Teflon	Othe	r.		gal / ft. of water	1° ID 0.041		653 1.469
Sampling Method:	Barnant		GeoPump	Su	bmersible	Othe	r.		1 gal = 3	.785 L =378		37 cubic feet
Duration of Pumping:	(min)	10	5						Unit Sta	hility WI	H TURBID	ITY <5 NTU
Average Pumping Rate:	(ml/min)	100	, w	ater-Quality	Meter Type	YSI-	556 & Had 2100P	h	pH	DO	Cond.	ORP
Total Valuma Damauadi	(aal)			Di	d well go dry	: Yes	No		∀ 0.1	∀ 10%	∀ 3.0%	∀ 10 mV
Total Volume Removed:	(gal)	2.77		Di	a well go dry	. 163	(10)					
	0905	2	0915	0920	5	0930	0935	. 8	9	1	0	11 1
Time:	100000000000000000000000000000000000000	0910	2.00	Mischell Co.	3.00	A STATE OF COMMENT OF CO.						
Volume Purged (L)	1.00	1.50	100	250		3,50	100				1	
Rate (mL/min)	100	100		1	100	100			-	V	rt	
Depth to Water (ft.)	12.10	12.10	12.11	12.11	12.11	12.11	12.11		1	40		
pH	7.11	7.17	7.18	7.17	7.22	7.22	7.22		1	1		
Temp. (C)	15.65	15.60	15.48	1542	15.66	15.00	BETT-MALE HE MALE TO STATE		1	1-		
Conductivity (mS/cm)	1.199	1.155	1.137	1.125	1.110	1.105	1.101		V_{-}			
Dissolved Oxygen	0.40	0.34	0.32	0.27	0.21	0.21	0.21	-/				
ORP (mV)	-56.1	-67.2	-68.4	-58.7	0.09.	-72.3	-75.6	/				
Turbidity (NTU)	58.33	17.60	11.98	7.74	3.19	2.89	2.75	1				
Notes:												
	(C-12 O.)	-9 Tunkid	2 O4h a=2)		Ana	lyses	# of Contain	ers A	nalyses		# c	of ontainers
nitial Purge: Sai			: Other:)		TOCs (40 ml with	H ₂ SO ₄)	2	C	hloride, Sulf	fate, &	1	
	, ra 0!				TSS		1	To	otal Metals		1	
Vell Integrity Informati					(I L Poly) PCBs (Total (Amber)	1) 2 t.	3 CDm		50 ml with 1 DS 250 ml)	HNO ₃)	1	
Surface Seal Condition (c	oncrete pad, b	olts, manho	le cover):	∞n	(Alline)		LUDE OVER			OUNT TO	TALS	
ocking Protective Well (Cap/expansion	plug: Goog	,		Sample ID:	*			Se	ample Time	- 000	
Well Lock Present?	Lock Cond	ition: Gove	,		MS/MSD:	TS 400) SO (10)	Dupli	icate:	Yes	093	
Other:					Duplicate II	D:	rlA		Dı	up. Time:	NA	
OVERSIGHT SAMPLE	(4)		TIME	:	Sampled B			Log I	Reviewed B		77	
PGW-MW7	1-02		093	5		The second of the second		TAL of Co	outh Burling	V		

GROUNDWATER SAMPLING LOG

Sampling Personnel:	5. Ha	urcus			1500		Well ID:	MW-8					
Client / Job Number:	B006453	9.0000 Tas					Date: 9	121/0					
Weather: 40°F	Party C	loudy,	Moderate	. Win	d		Time In:	1615	Time (Out:	140		
Well Information		- 10	-01		-								
Depth to Water:	(feet)		89'	(TIC)	-	Well Type			Flushmou	int 🗆	St	tick-Up	1
Total Depth:	(feet)			(TIC)	-	Well Mate	rial:	S	tainless Ste	el √		PVC	
Length of Water Column:	(feet)		.57'		-	Well Lock	ed:		Y	es 🗶		No	
Volume of Water in Well:	(gal)	3.6	13		- 1991	Measuring	Point Mark	red:	Y	es 🕱		No	
Three Well Volumes: Purging Information	(gal) Pump	on 6	31.37	2	-	Well Diam	eter:	1"		2* √	Other:		
Purging Method: (Peristaltic Pump)	Barnant		eoPump	₹ ·	Submersible	Othe	er:			Conver	sion Fac	tors	
Tubing Material:	Silicone	Po	lyethylene		Teflon	Othe	er.		gal / ft. of water	1" ID	2* ID	4" ID	6° ID
Sampling Method:	Barnant		GeoPump	X S	Submersible	☐ Othe	er.			0.041 785 L =37	0.163 85 ml = 0.	0.653	1.469
Duration of Pumping:	(min)	80		<u>_</u> ,					, gai v.	700 E -07	00 1111 - 0.	1007 0	abio ioot
A B	(1/1-)			/ O !!		YSI-	-556 & Ha	ach	- Т		TH TURB		TO A SERVICION OF THE
Average Pumping Rate:	(ml/min)	100		rater-Quali	ty Meter Typ	e.	2100P		pH	DO	Cond		ORP
Total Volume Removed:	(gal)	2.1	-		oid well go di	ry: Yes	(No	5	∀ 0.1	∀ 10%	∀ 3.0	% \	/ 10 mV
	1	2	3	4	1 5	6	7	1 8	9	1 .	10	11	12
Time:					1								
Volume Purged (L)	1632	1637	1642	1647	1652	165	1703	1708	1713				
Rate (mL/min)	100	100	100	100		100	100	100	100				
Depth to Water (ft.)	10.90'	10.90	10.90	10.90		10.40	10.90'	10.90	10.90				
рН	7.22	7.23	7.23	7.31		7.31	7.25	7.26	7.24				
Temp. (C)	16.49	16.63	17.23	17.66	.1 1	16.36	16.18	16.24	16.25				
Conductivity (mS/cm)	1.100	1.100	1.098	1.103	+ +	1.106	1.102	1.102	1.102				
Dissolved Oxygen	2.4	2.9	3.3	2.9	+ +	3.7	1.7	1.9	1.8				
ORP (mV)	-91.5	-	-99.0	-90.9		-1024	-99.0	1000000	-97.4				
Turbidity (NTU)		15.76	11.36	10.1		1 10	3.23	1.47	0.91				
Notes:	15.27	17.16	11.76	- 3	Battery	Used Car	A STATE OF THE STA	1.77	0.7/				
					Died	Adapter							
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Ana	alyses	# of Contai	iners Ar	nalyses		Could be be a second	# of Conta	iners
initial Purge: Glear,					TOCs (40 ml with	1 H ₂ SO ₄)	2	All	nloride, Sulfa kalinity. 50 ml)	ate, &			1
Final Purge: Clear,	No 00	lor			TSS (I L Poly)		1	To	tal Metals 50 ml with H	INO ₂)			ı
Well Integrity Informatio					PCBs (Total	al)	2	TE	(3)(F) * (75) 3) (1)(E) 5.64			- 1	
Surface Seal Condition (con	ncrete pad, b	olts, manhol	e cover):	rood.	(Alliber)	INC		RSIGHT SP		UNT TO	TAIS		
Locking Protective Well Ca					C	15400						110	
Well Lock Present? 4.5.	Lock Cond	ition: Go	d.		MS/MSD:	Yes	96 100	Duplic		nple Time Yes	# (·	718	
Other:					Duplicate I					o. Time:	1/4		
OVERSIGHT SAMPLE	ID:		TIME		Sampled B	By all	,	Log R	leviewed By		MA		
						2.110	arcus					KK	
					All sample	s submitted u	nder COC t	o TAL of So	uth Burlingto	on, Vermo	ont.	1	

Kalamazoo River Study Group – Plainwell TCRA,

GROUNDWATER SAMPLING LOG

Plainwell, Michig	an								2	ASK				
Sampling Personnel:	5. H	arcus					Well II): A		1	1W-	9		
Client / Job Number:		9.0000 Ta					Date:		2/09					
Weather: \$1°F	Partly cle	oudy , Lie	ht Wing				Time i	n: 134	8	Time	Out: 15	525		
Well Information	٧	153	-1		_									
Depth to Water:	(feet)	15.5		(TIC	<u>) </u>	Well Type	e:			Flushmou	int 🗆		Stick-Up	1
Total Depth:	(feet)	19.4		(TIC	<u>) </u>	Well Mate	erial:		S	Stainless Ste	el V		PVC	
Length of Water Column:	(feet)	3.9			<u> </u>	Well Lock	ed:			Y	es 🔀		No	
Volume of Water in Well:	(gal)	0.0			_	Measuring	g Point	Marked:		Y	es 🔀		No	
Three Well Volumes:	(gal)		_		_	Well Dian	neter:		1"		2° V	Other		
Purging Information	Pump 6	0 13	54											
Purging Method: (Peristaltic Pump)	Barnant	G	eoPump \	X	Submersible	Othe	er:					sion Fa	ctors	
Tubing Material:	Silicone	X Po	olyethylene	П	Teflon	Othe	er.			gal / ft. of water	1° ID	2º ID	4° ID	6° ID
Sampling Method:	Barnant		GeoPump	X S	Submersible	☐ Othe	er.				0.041 785 L =37	0.163	0.653	
Duration of Pumping:	(min)	90								. 3		00 1111	0.1007 0	abio rect
Average Pumping Rate:	(ml/min)			Votor Oueli	ity Meter Type	YSI	-556 8	& Hach		T	bility, WI	1		
Average Fullipling Nate.	(mining)	100		vater-Quali	ity meter Type		2100	P		pH	DO	Con		ORP
Total Volume Removed:	(gal)	2.3	8		Did well go dry	: Yes		No		∀ 0.1	∀ 10%	∀ 3.	0% \	√ 10 mV
	1	2	3	1 4	1 5	6		7	8	9	1 .	10	11	1:
Time:	1404	1409	1414	1419			1		Ŭ					
Volume Purged (L)	1.0	1.5	2.0	2.5	3.0	3.5	T							
Rate (mL/min)	100	100	100	100	100	100	1		1					
Depth to Water (ft.)	15.55	15.56	15.55	15.55		15.55	1			110	1			
рН	7.30	7.27	7.27	7.27		7.27	11			W/				
Temp. (C)	15.59	15.52	15.47	15.41		15,37	11			1				
Conductivity (mS/cm)	0.981	0.978	0.977	0.976	-	0.974	1					1		
Dissolved Oxygen	0.39	0.76	0.24	0.20	0.21	0.23						-		
ORP (mV)	-83.1	-82.8	-82.7	-83.4		-84.4								
Turbidity (NTU)	7.51	5.55	3,92	4.19	3.32	3.26		1.1						1
Notes:	1.01	7.57	1112	(.((1.12	7.20	-1 /9	W.						
							Stad	exed						
Purge Water Description	(Color? Od	or? Turbid	? Other?)		Anal	yses	# Co	of ntainer	s Ai	nalyses			# of Conta	iners
	Description of Companies				TOCs	4.607		2		loride, Sulfa	ite, &		1	
Final Purge: Class	, No ode	or			(40 ml with I	12504)		ı	To	tal Metals			1	
Well Integrity Informatio					(I L Poly) PCBs (Total)	1	1000	Tr	50 ml with H	NO ₃)		1	
Surface Seal Condition (con		olts, manho	le cover): 6	seed.	(Amber)		2+	/ CDI	(25	50 ml)				
Locking Protective Well Ca						INC	LUDE (OVERSIO	SHT SP	LIT IN AMO	UNT TO	FALS		
Well Lock Present? Yes					Sample ID:	T540					nple Time	-	19	
	LOCK COILG		a		MS/MSD:	Yes	C	9	Duplic	ate:	res C	No		
Other:					Duplicate ID	: -				Dup	. Time:	-		
OVERSIGHT SAMPLE I			TIME		Sampled By	5.H	arev	r	Log R	eviewed By		MFK	,	
PGW-MW9	-01		19	49	All samples				L of Sou	uth Burlingto			•	

GROUNDWATER SAMPLING LOG

Sampling Personnel:	5. H	areus					Well	ID.	MW-					
Client / Job Number:	B006453	9.0000 Ta					Date:		123/0	9				
Weather: 774	of over	ast,	Mist /s	prinkle	No.		Time	in: 1	100	Time	Out:	300		
Well Information		9.38'				Well Type								
Depth to Water:	(feet)	12.4	5 ′	(TIC)						Flushmo	1		Stick-Up	<u> </u>
Total Depth:	(feet)	3.07		(TIC)		Well Mate	102.00			Stainless Ste	ATTENDED TO STREET, ST.	,	PVC	Ш
Length of Water Column: Volume of Water in Well:	(feet) (gal)	0.5				Well Lock	ed:			<u> </u>	es 🗡		No	
Three Well Volumes:	(gal)	1.5				Measuring	Poin	t Marke	ed:	Y	es 🔊		No	
Purging Information	Pump	an 1	107			Well Diam	neter:		1*		2* √	Other:		
Purging Method: (Peristaltic Pump)	Barnant [eoPump	× 5	Submersible	Othe	er:				Conve	sion Fa	ctors	
Tubing Material:	Silicone	N Po	olyethylene		Teflon	✓ Othe	er.			gal / ft. of water	1° ID	2° ID 0.163	4° ID	6" ID
Sampling Method:	Barnant		GeoPump	'S s	ubmersible	Othe	er.				.785 L =37		0.653 0.1337 cu	1.469 ubic feet
Duration of Pumping:	(min)	110		(
Average Pumping Rate:	(ml/min)	100	v	Vater-Qualit	ty Meter Type	. YSI-		& Ha	ch		bility, W	1	-	Managara and a second
	(.,		210			pH ∀ 0.1	DO ∀ 10%	Con ∀ 3.		ORP 10 mV
Total Volume Removed:	(gal)	2.0	1(D	id well go dry	r: Yes		No	2	[V 0.1]	V 10%	V 3.	0% V	10 mV
Time:	1117	1122	1127	1132	1137	1142	T	7	8	9		10	11	12
Volume Purged (L)	#1.0	1.5	2.0	2.5	3.0	3.5	1	1						
Rate (mL/min)	108	wo	100	100	(00	100	1		1					
Depth to Water (ft.)	9.39'	9.38	9.38	9.39	9,38	9.38			1					
pH	7.04	7.04	7.04	7.04	7.04	7.05		1						
Temp. (C)	17.08	17,10	16.95	16.94	16.90	16.87		1		1	100	5		
Conductivity (mS/cm)	1.332	1.317	1.308	1.304		1.298		+			XWO	A		
Dissolved Oxygen	0.60	0.26	0.26	0.23	0.22	0.22		1			PA	K		
ORP (mV)	-80.4	-84.5		- 85,9		-77.0		-				1		
Turbidity (NTU)	14.18	9.73	-86.8 5.47	3.73	2.56	2.49	-	-					1	
Notes:	1-1.0	1117	7,44	1117	2.76	2.71	01	-						-
	1						Na	biliz	ed					
eurge Water Description	(Color? Ode	or? Turbid	? Other?)		Anai	lyses		of ontain	ners A	Analyses			# of Contai	iners
nitial Purge: Clear, Vinal Purge: Clear	No oc	lor			TOCs (40 ml with	H₂SO₄)		4	A	Chloride, Sulf Alkalinity. 250 ml)	ate, &		2	
inal Purge: Clear	No O	dor			TSS (I L Poly)			2	T	otal Metals 250 ml with h	INO ₃)		2	
Vell Integrity Information					PCBs (Tota (Amber)	1)		4	Т	DS 250 ml)	1		2	
urface Seal Condition (con	ncrete pad, b	olts, manho	le cover): (Good.	(unbor)	INC				PLIT IN AMO	DINT TO	PAIS	_	
ocking Protective Well Ca	p/expansion	plug: G	ood.		Comple IC:	/-•			J.J., J				100	
Vell Lock Present? 4es,	Lock Condi	ition: Go	od.	-	Sample ID: MS/MSD:	7541 Yes		O (ON	Dupl		mple Tim	e: [[48	
Other:					Duplicate ID	TCA	- (_					đ	
OVERSIGHT SAMPLE I	D: , ,	est c	TIME	.	Sampled By					Reviewed By	p. Time:	121	8	
No	dverst.	or Mu	ple I-In			2. Har				outh Burlingt		MFK ont.		
	40	I LIM	- 10	THE RESIDENCE	poo						,			

GROUNDWATER SAMPLING LOG

Sampling Personnel:	1. KONA						Well ID:	MM-			4			
Client / Job Number:		9.0000 Tas				a la la la la la la la la la la la la la	Date:	9 23				110		All of the
Weather: 70°F	Overe	ST, LT	Wrg.				Time In:	090	0	Time	Out:	1140		
Well Information '		000			-	Mall Tone		-	- 1					-1
Depth to Water:	(feet)	8.38		(TIC)		Well Type		c		Flushmou	-1	S	tick-Up	<u> </u>
Total Depth:		4.57		(TIC)		Well Mate			St	tainless Ste	el V		PVC	
Length of Water Column: Volume of Water in Well:	(feet) (gal)	0.75			7	Well Lock	ed:			Y	es 🔉		No	
Three Well Volumes:		2.25	-			Measuring	Point Ma	arked:		Y	es 🗡		No	
	Pemp a	81,121	910			Well Diam	eter:		1"		2* √	Other:		-
Purging Method: (Peristaltic Pump)	Barnant			N S	Submersible	Othe	er:			111	1	sion Fac		
Tubing Material:	Silicone	Po	lyethylene		Teflon	Othe	er.	Til 1		gal / ft. of water	1° ID	2" ID 0.163	4" ID 0.653	6" ID
Sampling Method:	Barnant		GeoPump	S	ubmersible	Othe	er.			1 gal = 3.	785 L =37			
Duration of Pumping:	(min)	100	3							Unit Sta	bility, Wi	TH TI IDE	RIDITY	<5 NTII
Average Pumping Rate:	(ml/min)	(00)	v	/ater-Qualit	y Meter Type	YSI-	556 & 2100P			pH	DO DO	Cond		ORP
Total Volume Removed:	(gal)	10		n	id well go dry	r: Yes		No	_	∀ 0.1	∀ 10%	∀ 3.0		10 mV
Total Volume Nemoved.	(gai)	10	<u> </u>		id their go dry	. 103								
	1	2	3	4		6		7	8	9	1	10	11	12
Time:	0920	0925	0930	0935		0945								
Volume Purged (L)	1.00	1.50	2.00	2.50	300	3.50								
Rate (mL/min)	100	100	100	100	100	100								
Depth to Water (ft.)	8.38	8.38	8.38	8.38	8.38	8.38					. /			
pH	7.10	7.14	7.19	7.16	7.20	7.22) ANE	X			
Temp. (C)	15.57	15.56	15.51	15.48	15.43	1548				1				
Conductivity (mS/cm)	0.964	0.923	0.916	0.905	0.900	0.894			/					
Dissolved Oxygen	0.30	0.34	0.27	0.22	0.26	0.21		1	/					
ORP (mV)	-79.5	-720	.67.3	-62.6	-63.4	-61.8		1						
Turbidity (NTU)₃	7.49	5.34	4.10	2.42	1.91	1.48	/							
Notes:		-												,
Purge Water Description (Color? Ode	or? Turbid	? Other?)		Anal	yses	# of	tainers	Ar	alyses			# of Contai	ners
Initial Purge: CLEAC	P0 0	DOC	· other.		TOCs (40 ml with I	H ₂ SO ₄)	2		Alk	loride, Sulfa	ate, &	2		
Final Purge: CWL	No	apar			TSS (I L Poly)	2	- 1		To	0 ml) tal Metals 0 ml with H	INO ₂)	-		
Well Integrity Information	1				PCBs (Total (Amber)) 4			TD			7		
Surface Seal Condition (con	crete pad, be	olts, manho	le cover):	0000	(unicory	INC	LUDE OV	/ERSIGH	1	JT IN AMO	UNT TO	TALS C	3945	
Locking Protective Well Ca	p/expansion	plug: Goe			Sample ID:									
Well Lock Present?	Lock Condi	tion: Go	ю		MS/MSD:	TS 40	044	, .	Duplic		nple Time	No No	45	
Other:					Duplicate ID	· 7540	OHE			Dui	o. Time:			
OVERSIGHT SAMPLE II			TIME		Sampled By	1 2 4	, , ,	L	og R	eviewed By		11		
PGW-MW	11-01		091	15	All samples		hagen nder coo		of Sou	th Burlingto		AC ont.		
									1000					

GROUNDWATER SAMPLING LOG

Sampling Personnel:	S. Ha	rcus					Well ID:	MW-						
Client / Job Number:	B006453	39.0000 Ta	sk 00500				Date:	9/23/						
Weather:							Time In:	0830	>	Time	Out:	1010	Village III	
Well Information		10.18	,		-	-								10000
Depth to Water:	(feet)	10.14	9 '	(TIC)		Well Type:				Flushmou	unt 🗌		tick-Up	
Total Depth:	(feet)	11.99		(TIC)		Well Mater	ial:		S	tainless Ste	el V		PVC	
Length of Water Column:	(feet)	0.3				Well Locke	ed:			Y	es 🗵		No	
Volume of Water in Well:	(gal)	0.9			-	Measuring	Point Ma	arked:		Y	es 🔀	5	No	
Three Well Volumes:	(gal)		7.5		-	Well Diame	eter:		1"		2* V	Other:		
Purging Information	Poo	mp on (2 084	-1										
Purging Method: (Peristaltic Pump)	Barnant	G	eoPump	₹ s	Submersible	Other	r.				To the latest	ersion Fa	L VIII	Tavin
Tubing Material:	Silicone	N Po	olyethylene		Teflon	Other	r.			gal / ft. of water	1° ID	2" ID 0.163	4" ID 0.653	6" ID
Sampling Method:	Barnant		GeoPump	≥ S	ubmersible	Othe	r:			1 gal = 3	L. VERNIN	3785 ml = 0	100.000	
Duration of Pumping:	(min)	85			e la					Umis Can	L.:::4 V4	/ITH TUR	DIDITY	45 NITH
Average Pumping Rate:	(ml/min) 100	, v	/ater-Qualit	y Meter Type	YSI-	556 &			pH pH	DO DO	Con		ORP
							2100P		-	∀ 0.1	∀ 10%	BROWN NO. 1 CO.	00.00	√ 10 mV
Total Volume Removed:	(gal)	2.2	2	D	id well go dr	y: Yes	(No.			,		070	
	1 1	2	3	4	5	6		7]	8	9		10	11	1:
Time:	0851	0856	0901	0906	0911	0916			J	3				
Volume Purged (L)	-1.0	~1.5	2.0	2.5	3.0	3.5								/
Rate (mL/min)	100	100	100	100	100	100							/	
Depth to Water (ft.)	10-25	10.25	10.25	10.25	10,25	10.25								
pH	6.94	6.97	7.00	7.01	7.02	7.02				6.	M			
Temp. (C)	17.60	17.56	17.95	17.51	17.54	V 100 100 100 100 100 100 100 100 100 10					1			
Conductivity (mS/cm)	0.838	0.828	0.821	0.819	0.818	0.818			T	To the second	V			
Dissolved Oxygen	0.33	0.33	0.31	0.27	0.28	0.27			/	1	1			
ORP (mV)	-50.6	-46.9	-44.4	-42.5		-38.9		17						
Turbidity (NTU)	2,15	1.40	1.29	0.96	0.65	1.02								
Notes:		1010	1.0	10.10	10.00	Fable	/							
		1				made	<i>'</i> .		106					
Purge Water Description	(Color? Od	lor? Turbid	? Other?)		Ana	lyses	# of Con	tainers	Ar	nalyses			# of Conta	iners
Initial Purge: Clear,	No 00	dor			TOCs (40 ml with	H ₂ SO ₄)	2	,	All	lloride, Sulficalinity.	ate, &		1	
Final Purge: Clear					TSS (I L Poly)		1		To	50 ml) tal Metals 50 ml with H	łNO∘)		1	
Well Integrity Informatio					PCBs (Total (Amber)	il)	2		TE	COTTON OF FRIDERS	3/		1	
Surface Seal Condition (con	ncrete pad, l	oolts, manho	ole cover): (Tood.	(anibor)	INCI	1000	VERSIGH			OUNT TO	OTALS		
ocking Protective Well Ca	ap/expansion	n plug: Yes	6000	(.	INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTALS									
Well Lock Present? Ves.	Lock Cond	lition: 6	od.		Sample ID: T540043 Sample Time: 0933 MS/MSD: Yes No Duplicate: Yes No									
Other:					Duplicate II	D: N/A	,			Du	p. Time:			
OVERSIGHT SAMPLE I	Œ:		TIME	:	그림 사람의 집에 없었다.	5. Harc			Log R	eviewed By		N		
											[VI	- K		
					All samples	submitted ur	ider CO	C to IAL	UI 50	um Burlingt	on, ven	nont.		

GROUNDWATER SAMPLING LOG

Client / Job Number:	B0064539						Date:	11621	7			1800	1,05	
Weather: 75° -	OVERCH	T, C	um				Time In:	1200	2	Time O	ut: [?	323		
Depth to Water:	(feet)	0.07		(TIC)	7	Well Type	:		Flu	shmoun	t 🗆	Stick	-Up	
Total Depth:		5.00		(TIC)		Well Mate	rial:		Stainle	ss Steel	V	Sec. No.	vc	
Length of Water Column:	(feet)	4.93				Well Lock	ed:			Yes	1		No	
Volume of Water in Well:	(gal)	0.80			_	Measuring	Point Ma	arked:		Yes	1		No	
Three Well Volumes:	(gal)	Z.40)		_	Well Diam	eter:		1" [2 1	Other:		
Purging Information	PUMP	on (1210)										
Purging Method: (Peristaltic Pump)	Barnant [Submersible	Othe	er:					sion Factor		
Tubing Material:	Silicone	Po	lyethylene	П	Teflon	Othe	er.		-	I / ft. water	1' ID		" ID	6° ID
Sampling Method:	Barnant	П	GeoPump	S	ubmersible	☐ Othe	er:				0.041 B5 L =378	0.163 0 85 ml = 0.13	.653 37 cut	1.469 bic feet
Duration of Pumping:	(min)	75												
Average Bumping Rate:	(ml/min)		10	lator Qualit	h, Motor Typo	YSI-	-556 &	Hach		Control of the Control		H TURBID	_	In the later of
Average Pumping Rate:	(ml/min)	loo	V	rater-Quali	ty Meter Type		2100P		Total Control	H	DO	Cond.	-	ORP
Total Volume Removed:	(gal)	1.98	3	D	id well go dry	: Yes	(No		0.1	√ 10%	∀ 3.0%	IA	10 mV
	1 1	2	3	4	5	6		7	8	9	1	0	11	1
Time:	1220	1225	1230	1235	1240	1245								
Volume Purged (L)		1.5	2.0	2.5	3.0	3.5								/
Rate (mL/min)	100	100	100	100	100	100								
Depth to Water (ft.)	10.09	10.09	10.09	10.09	10.09	10.09								
рН	768	7.64	7.65	7.68	7.69	2,68								
Temp. (C)	15.87	16.82	15.90	15.78	15.70	15.71								
Conductivity (mS/cm)	.841	.851	.856	.857	.854	. 857								
Dissolved Oxygen	盛,52	.43	133	.23	121	,20		/						
ORP (mV)	-93.4	-92.4	-96.9	-98.9	-99.4	-97.1		/						
Turbidity (NTU)	4.85	3.40	3.48	2.40	2.40	2.38	/							
Notes:						Stability	ed							
	-				Anal		# of		Analys	-00		# (of	
urge Water Description			? Other?)	557	Allai	yses	Con	tainers	Analys			Co	ntair	ners
nitial Purge: Clear,	No od	• •			TOCs (40 ml with I	H ₂ SO ₄)	2		Alkalinit (250 ml)		е, &	1		
inal Purge: Clear	, No od	ov		4	TSS (I L Poly)		1		Total M		(O ₂)	1		
ell Integrity Informatio	<u>n</u>				PCBs (Total)	2		TDS		-3,	i		
urface Seal Condition (cor	ncrete pad, bo	olts, manhol	e cover):	W.	(Amber)	INC	LUDEON	/EDSIGUT	(250 ml)		INT TO	J ALS		
ocking Protective Well Ca	p/expansion	plug: Yes	New.	veu		INC	LUDE O	/ERSIGH1	3FLIT II				4 .	
Vell Lock Present? Yes					Sample ID: TS4048 Sample Time: /25						0			
ther:					MS/MSD:	165			apiicate.			۳.		
OVERSIGHT SAMPLE ID: TIME:					Duplicate ID Sampled By						Time:			
			TIVE		Compled Du			11.	g Review	und Due		1	VANDOW.	OF STREET

GROUNDWATER SAMPLING LOG

Sampling Personnel: Client / Job Number:		9.0000 Tas	sk 00500				WELLID:	W-1-	1				
Weather: 68°F	SUNHU	9.0000 12	SK OUSOU				Time In: 104	-	Time	Out:	210		
Well Information	3												
Depth to Water:	(feet)	7.70		(TIC)		Well Type	:		Flushmou	ınt 🗆	s	tick-Up	1
Total Depth:	(feet)	11.6	0'	(TIC)		Well Mate	rial:	S	tainless Ste	el V		PVC	
Length of Water Column:	(feet)	3.8			_	Well Lock	ed:		Y	es 🖹		No	
Volume of Water in Well:	(gal)	0.62			-	Measuring	Point Marked:		Y	es 🕱		No	
Three Well Volumes:	(gal)	1.86	CONTRACTOR SECTION AND ADDRESS OF THE PARTY			Well Diam	neter:	1"		2 1	Other:		
Purging Information	lomp	on G	058										
Purging Method: (Peristaltic Pump)	Barnant [☐ Ge	eoPump	()	Submersible	Othe	er.			Conver	sion Fac	tors 4" ID	6" ID
Tubing Material:	Silicone	Po	olyethylene		Teflon	Othe	er.		gal / ft. of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant	Ο.	GeoPump	X s	Submersible	sible Other:			1 gal = 3.	785 L =37	'85 ml = 0).1337 cu	bic feet
Duration of Pumping:	(min)	65		X					Unit Sta	bility, WI	ти тпе	RIDITY	S NTI
Average Pumping Rate:	(ml/min)	100	W	later-Quali	ty Meter Type	YSI-	-556 & Hack	h	pH	DO DO	Con		ORP
Total Volume Removed:	(gal)	1.71		П	Did well go dry	r: Yes	2100P	1	∀ 0.1	∀ 10%	∀ 3.0	STREET, SQUAR	10 m\
	(3)												
Time:	1108	1113	1118	1123		1133	1138	8	9		10	11	,
/olume Purged (L)	1.0	1.5	2.0	2.5	3.0	3.5	4.0						/
Rate (mL/min)	100	100	100	100	loo	100	100					/	
Depth to Water (ft.)	7.79	7.79	7.79	7.79	7.79	7.79	7.79				/		
рН	7.05	7.05	7.05	709		7.06	7-06			AP	1		
Temp. (C)	15,29	15.20	15.16	15,12	15.14	15.13	15.09		/	M)		
Conductivity (mS/cm)	0.867	0.868	0.870	0.870	0.87	0.871	0.871		6	M			
Dissolved Oxygen	0.40	0.47	0.48	0.44	0.28	0.16	0.16		1				
ORP (mV)	-76.8	-79.8	-80.8	-82.0		-81.4	-82.3	,					
Furbidity (NTU)	3.93	4.64	2.60	1.73		3.79	2.59	1					
Notes:	1			()			Stable	1					
		L	1										
irge Water Description	(Color? Od	or? Turbid	2 Other?)		Anal	yses	# of Containe	rs Ar	nalyses			# of Contai	ners
uitial Purge: No Color)	TOCs (40 ml with l	H-8O-)	2	Ch	loride, Sulfa	ate, &		1	
inal Purge: No Colo					TSS	112004)	- /	To	tal Metals	INO)		- 1	
ell Integrity Information	,			0	(I L Poly) PCBs (Total)	2+	, TD		INO3)		1	
rface Seal Condition (cor	ncrete pad, b	olts, manho	le cover):	collent	(Amber) 2 +1 (250 ml)								
ocking Protective Well Ca					INCLUDE OVERSIGHT SPEIT IN AMOUNT TOTALS								
ell Lock Present? Yes,					Sample ID:	75401 Yes	050	Duplic		mple Time	e: [[4	1
ther:					MS/MSD:			_ ap.ic					
VERSIGHT SAMPLE I	D:		TIME		Duplicate ID			Llog B		p. Time:			
	GW-MW14-01 1141					Sampled By: S. Harres Log Reviewed By: M-K							
LPM- COM IL	,	All samples submitted under COC to TAL of South Burlington, Vermont.											

Kalamazoo River Study Group – Plainwell TCRA,

GROUNDWATER SAMPLING LOG

Convertion Con	Sampling Personnel:	5. Ho	ireus	/J. B	ender			Vell ID:	MW	1-15				
Weel Information Weel Me				1					7/25/	109				
Well Information											Out:	1140		
Total Depth: (feet) 14-550 Tick	Well Information	J												
Length of Walter Column: (feet) S	Depth to Water:	(feet)					Well Type:	y		Flushmou	ınt 🗆	8	tick-Up	1
Volume of Water in Well: (gal)	Total Depth:	(feet)			(TIC)	-	Well Mater	ial:		Stainless Ste	el V		PVC	
Three Well Volumes:						- 1	Well Locke	d:		Y	es 🛮		No	
Purging Information Purging Information Purging Information Purging Information Purging Information Purging Method: (Peristatic Purge) Barnant GeoPump Submersible Other: Other:						-	Measuring	Point Mar	ked:	Y	es 🕱		No	
Purging Information	Three Well Volumes:			2.12			Well Diame	eter:		1" [2 1	Other:		
Ceristatic Pump) Condition	Purging Information	tow	@ 0	955		F '	Taking							
Tubing Material: Silicone Polyethylene Tefon Other. Other		Barnant [] G	eoPump	X s	Submersible	Other				1	Principal Control	1	6" ID
Duration of Pumping: (miin)	Tubing Material:	Silicone	N Po	olyethylene		Teflon	Other Other							1,469
Average Pumping Rate: (ml/min)	Sampling Method:	Barnant		GeoPump	X s	ubmersible	Other	•		1 gal = 3				
Average Pumping Rate: (ml/min) 100 Water-Quality Meter Type: TS1-305 & F14CH Pt 100 Cond. ORP Total Volume Removed: (gal) 2 .64 Did well go dry: Yes No Pt Did V 10% V 3.0% V 10 mV	Duration of Pumping:	(min)	100							- Unit Cta	hiliby Mr	TH THE	BIDITY .	CE NTII
Total Volume Removed: (gal) 2.64 Did well go dry: Yes	Average Pumping Rate:	(ml/min)	100	v	later-Qualit	y Meter Type			lach					
Time: 1010 1 10 2 10 20 1025 1030 1035 7 8 9 10 11 11 12 10 15 10 20 1025 1030 1035 7 8 9 10 11 11 11 11 11 11	Total Valuma Pamayad:	(gal)		1		id well as day			(S)	The state of the s	No State Co.	E	C (1.25-11) 1 1662	-
Volume Purged (L)	Total volume Removed.	(gai)	2.6	<u>T</u>		id well go di y	. res	(9	-				
Volume Purged (1)		1010	SALE VILLETTO SUN					1		8 9		10	11	12
Rate (mL/min)	Time:	9145		-	-			1	1					
Depth to Water (ft.) R. S. 8.89 8.89 8.89 8.89 8.89 ph	Volume Purged (L)	1.0	1.5	2.0	2.5	3.0	3.5	1	1					
PH	Rate (mL/min)	100	100		100	160	100			1				
Temp. (C)	Depth to Water (ft.)		8.89	8.89	8.89	8.84	8.89			AL	an			
Conductivity (mS/cm) Lilbs 1.159 1.151 1143 1.141 1.141 Dissolved Oxygen D:24 0.24 0.24 0.17 0.16 0.16 ORP (mV) -77.6 -50.7 -80.8 -82.1 -82.6 -82.6 Turbidity (NTU) 5.44 8.50 5.35 2.38 1.87 0.80 Notes: Purge Water Description (Color? Odor? Turbid? Other?) Initial Purge: Clear, No Odor Final Purge: Clear, No Odor Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): New Holl Lock Present? Yes Lock Condition: Good. Other: Other: Other: Other: Other: Duplicate ID: Duplicate: Yes Other: Dup. Time: Dup. Time: Dup. Time:	pH	7.06	7-06	30.5	7.86	7.07	7.07			1	(8)			
Dissolved Oxygen 0.26 0.24 0.24 0.17 0.16 0.16 0.16 ORP (mV) -77.6 -80.8 -82.1 -82.6 -82.6 Turbidity (NTU) -78.6 -80.7 -80.8 -82.1 -82.6 -82.	Temp. (C)	14.74	14.67		14.67	14.67	14.63			KN	X			
Turbidity (NTU) ORP (mV) Turbidity (NTU) S.44 S.50 S.35 Z.38 J.87 D.80 Analyses Containers TOCs (40 ml with H ₂ SO ₄) Z.250 ml) TSS (250 ml) Surface Seal Condition (concrete pad, bolts, manhole cover): New Locking Protective Well Cap/expansion plug: Ucs, New Well Lock Present? Ucs Lock Condition: Good. Other: OVERSIGE SAMPLE ID: Dup. Time: Dup. Time:	Conductivity (mS/cm)	1.165	1.159		143	1.141	1.141							
Turbidity (NTU) Notes: S.44 8.50 5.35 2.38 1,87 8.80	Dissolved Oxygen	0.76	0.24	0.24	0.17	0.16	0.16					1		
Analyses # of Containers Choride Containers Containers Containers	ORP (mV)	-77.6	-80.7	8,08	-82.1	-82.6	-82.6							
Analyses # of Containers TOCs (40 ml with H2SO4) Z Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): New Well Lock Present? Yes Lock Condition: Good. Other: OVERSIGHT SAMPLE ID: Duplicate ID: Duplicate ID: Analyses # of Containers Analyses # of Containers # of Containers # of Containers Chloride, Sulfate, & Alkalinity. (250 ml) Total Metals (250 ml with HNO3) PCBs (Total) (250 ml) TDS (250 ml) MS/MSD: Yes Duplicate: Yes Wo	Turbidity (NTU)	8.44	8.50	5.35	2.38	1.87	0.80	1	1					1
Analyses # of Containers TOCs (40 ml with H ₂ SO ₄) Z Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): New Well Lock Present? Yes Lock Condition: Good. Other: Analyses # of Containers Chloride, Sulfate, & Alkalinity. (250 ml) TOCS (40 ml with H ₂ SO ₄) Z Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): New INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTALS Sample ID: TS 4049 MS/MSD: Yes ID Duplicate: Yes ID Duplicate ID: Dup. Time:	Notes:					-	Stalle		4					
Purge Water Description (Color? Odor? Turbid? Other?) Initial Purge: Clear, No Odor Final Purge: Clear, No Odor Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): New Locking Protective Well Cap/expansion plug: Us, New Well Lock Present? Yes Lock Condition: Good. Other: OVERSIGHT SAMPLE ID: Duplicate ID: Containers Containers Containers Containers Containers Containers Containers Containers TOCs (40 ml with H ₂ SO ₄) Z Chloride, Sulfate, & Alkalinity. (250 ml) Total Metals (250 ml with HNO ₃) PCBs (Total) (250 ml) INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTALS Sample ID: TS 4049 MS/MSD: Duplicate: Yes Duplicate: Yes Duplicate ID: Dup. Time:					T	Anal				Analyses				
Initial Purge: Clear, No Odor Final Purge: Clear, No Odor Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): New Locking Protective Well Cap/expansion plug: Us, New Well Lock Present? Us Lock Condition: Good. Other: OVERSECHT SAMPLE ID: TOTAL Metals (250 ml) with HNO3) PCBs (Total) (Amber) INCLUDE OVERSIGHT SPLIT IN AMOUNT TOTALS Sample ID: TS 4049 Sample Time: 1040 MS/MSD: Yes Duplicate: Yes Duplicate: Yes Duplicate: Yes Duplicate ID: Dup. Time:		A37 (3)0-1 1 1 1 7 1 / 8 7		? Other?)				Conta	ainers		ate &		Contai	ners
Final Purge: Clear, No Odor Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): New Locking Protective Well Cap/expansion plug: US, New Well Lock Present? US Lock Condition: Good. Other: OVERSIGHT SAMPLE ID: Duplicate ID: Dup. Time:	Initial Purge: Clear,	No O	dor				H ₂ SO ₄) ∠	7		Alkalinity.	ato, u)		
Well Integrity Information Surface Seal Condition (concrete pad, bolts, manhole cover): New Locking Protective Well Cap/expansion plug: UES, New Well Lock Present? YES Lock Condition: Good. Other: OVERSIGHT SAMPLE ID: Duplicate ID: Dup. Time:	Final Purge: Clear,	No O	dor				1			Total Metals	INO ₃)	1		
Surface Seal Condition (concrete pad, bolts, manhole cover): New Locking Protective Well Cap/expansion plug: Us, New Well Lock Present? Us Lock Condition: Good. Other: Duplicate ID: Dup. Time:						PCBs (Total) 7	+1	CDM			1		
Sample ID: TS 4049 Sample Time: 10 40 MS/MSD: Yes Duplicate: Yes Duplicate: Yes Duplicate: Yes Duplicate: Duplicate ID: Duplicate:	Surface Seal Condition (con-	crete pad, be	olts, manho	le cover): λ	lew	(Total Control				OUNT TO	TALS		
Well Lock Present? Yes Lock Condition: Good. MS/MSD: Yes Duplicate: Yes Duplicate: Yes Duplicate: Yes Duplicate ID: Dup. Time:	Locking Protective Well Cap	p/expansion	plug: Ye	s. New		Sample ID:							114	
Other: Duplicate ID: Dup. Time:	Well Lock Present? Yes	Lock Condi	tion: G	od.				-				-	70	
OVERSIGHT SAMRIE ID.	Other:							-		Du	o Time			
Sampled by.	OVERSIGHT SAMPLE II	D:		TIME			- 11		11			11		
PGW-MW 15-01 1040 S. Harws William Market S. Harws All samples submitted under COC to TAL of South Burlington, Vermont.	PGW-MW!	5-01		104	-0		S. Ha				14	ont.		

Kalamazoo River Study Group – Plainwell TCRA,

GROUNDWATER SAMPLING LOG

Plainwell, Michig	an								Sh	S	AMP	EB	7	
Sampling Personnel:	M. KOHA	WW .					Well ID:	SEM	,		SG-	4E 0		
Client / Job Number:	B0064539	9.0000 Tas	sk 00500				Date:	9/2	195					
Weather: 70° F,	PARTLY	Casey			STORY .	1	Time In:	1420	/ Tin	e Out:	14	50		
Well Information														
Depth to Water:	(feet)			(TIC)	_	Well Type:			Flushr	nount		Stick	(-Up	1
Total Depth:	(feet)			(TIC)		Well Mater	ial:		Stainless	Steel	1	- 1	PVC	
Length of Water Column:	(feet)					Well Locke	ed:			Yes			No	
Volume of Water in Well:	(gal)				- 95	Measuring	Point Mar	rked:		Yes			No	
Three Well Volumes:	(gal)		:t		- 100	Well Diame	eter:		1" 🗆	2"	1	Other:		
Purging Information														
Purging Method: (Peristaltic Pump)	Bamant	Ge Ge	eoPump	5	Submersible	Other	г.			Con	versio	n Facto	rs	
Tubing Material:	Silicone	☐ Po	lyethylene]	Teflon	Other	-		gal / f		-		t. ID	6" ID
Sampling Method:	Barnant		GeoPump	¬ s	Submersible	Other	T.			0.0		ml = 0.13	.653 37 cul	1.469 bic feet
Duration of Pumping:	(min)								. 941			0.10		
				O"		YSI-	556 & H	lach		-	- 1	TURBID		
Average Pumping Rate:	(ml/min)		vvate	er-Quain	ty Meter Type:		2100P		pH	DC		Cond.	-	ORP
Total Volume Removed:	(gal)			D	oid well go dry:	Yes	N	lo	∀ 0.1	¥ 10	0%	∀ 3.0%	IA	10 mV
	1	2	3	4	5	6	7	7	8	9	10		11	12
Times	1430	-	3	7		٥			°	9	10		''	12
Volume Purged (L)	1430							+					-	_
													-	
Rate (mL/min)						-	7	1					\dashv	
Depth to Water (ft.)	0.114					(M	W)							
pH	18.41					ME	4							
Temp. (C)	19.95					-								
Conductivity (mS/cm)	0.729			/										
Dissolved Oxygen	10.60													
ORP (mV)	210.0													
Turbidity (NTU) ≈	33.31													
Notes:														
				ſ	Anab		# of					# (of	
Purge Water Description	(Color? Odo	r? Turbid?	? Other?)		Analy	1363	Conta	iners	Analyses			Co	ntair	ners
nitial Purge:	ه الم	opce			TOCs (40 ml with H	1.50.)	6		Chloride, S Alkalinity.	ulfate, &		_3		
Final Purge:	e, No	ame			TSS	12304)	3		(250 ml) Total Metal	3				
Well Integrity Information		SP((I L Poly) PCBs (Total)		-		(250 ml with TDS	HNO ₃)		3		
		ilta mankal	a agran).		(Amber)		6		(250 ml)			3		
Surface Seal Condition (co.	/		ic cover):			INCL	UDE OVE	RSIGHT	SPLIT IN A	TOUNT	TOTA	LS		
Locking Protective Well Co					Sample ID:	753	200			Sample T	īme:	143	0	
Well Lock Present?	Lock Condit	tion:			MS/MSD:	Yes	No	Du	plicate:	Yes	Ø	TOTAL CO. CO.	<u> </u>	
Other:					Duplicate ID:		A		1	Oup. Tim	e: -			
OVERSIGHT SAMPLE	ID:		TIME:		Sampled By:		<u> </u>	110	a Dovinued	Pve		,		
					Sampled by.	MEL		1 20	g Reviewed	Dy.	MA/I			

GROUNDWATER SAMPLING LOG

Sampling Personnel:	M. KOHACEN	00 Task 00500				· MIAA	56-			He I	
Weather: 65° F		wod, LT wmb			Date: 9[2	29107 245	Time	Out: 1	415	1	
Well Information	, 1 1 1 2	wo 1 , 2 , 10 mm			rane m. v.	313	Time	out. ,	1.2		
Depth to Water:	(feet)		TIC)	Well Type	ı:	7 17 7	Flushmou	ınt 🗆	Stic	k-Up	1
Total Depth:	(feet)		TIC)	Well Mate	erial:	S	tainless Ste	el V		PVC	
Length of Water Column	(feet)			Well Lock	ed:			es 🖯		No	П
Volume of Water in Well:	(gal)			Measurin	Point Marked:			es 🗆		No	
Three Well Volumes:	(gal)			Well Dian		1"		2° V	Other:	140	
Purging Information								2 1			
Purging Method:	Barnant	GeoPump	Submersible	☐ Othe	r			Conver	sion Facto	rs	
(Peristaltic Pump)			Teflon				gal / ft.	1" ID	2" ID .	4" ID	6" ID
Tubing Material:	Silicone	Polyethylene	Tellon	Othe	er.		of water	0.041	0.163	0.653	1.469
Sampling Method:	Barnant	GeoPump	Submersible	Othe	er:		1 gal = 3.	785 L =37	85 ml = 0.13	337 cu	bic feet
Duration of Pumping:	(min)									y in the	
Average Pumping Rate:	(ml/min)	Water-0	tuality Meter Typ	e. YSI	-556 & Hach	1		DO DO	TH TURBIC	1	1.5.11.1.1.1.1
	(2100P		pH ∀ 0.1	∀ 10%	Cond. ∀ 3.0%	-	ORP 10 mV
Total Volume Removed:	(gal)		Did well go dr	y: Yes	No		V 0.1	V 1076	V 3.0%	- · ·	10 1110
	1 1	2 3	4 5	6	7	8	9	1 1	0	11	
Time:	1400										
Volume Purged (L)	-									7	_
Rate (mL/min)	-										
Depth to Water (ft.)	12		Yang Salas								
pH	8.26	Cana I			1,					+	
Temp. (C)	19.83			M	1						-98
Conductivity (mS/cm)	0.781			7"							
Dissolved Oxygen	9.50										
ORP (mV)	259.3							1			
Turbidity (NTU)	5.16										
Notes:	3.46				-						
	- (C-19 O19)	C 1130 O4 - 40	Ana	lyses	# of Containe	re Ar	nalyses		# 0	of ontail	nare
Purge Water Description		turbiu: Other:)	TOCs		.,	Ch	loride, Sulfa	ate, &		7110011	
nitial Purge: CKAK	NO ODDE		(40 ml with	H ₂ SO ₄)	4		(alinity. 50 ml)		2		
nitial Purge: CKAL	NO ODOE		TSS (I L Poly)		2	To	tal Metals 50 ml with H	INO-)	7		Star 1
Vell Integrity Informati			PCBs (Tota	al)	11	TD	s	1103)			
urface Seal Condition (co		manhole cover).	(Amber)		4	(25	50 ml)		4		
				INC	LUDE OVERSI	IGHT SP	LIT IN AMO	OUNT TO	ALS		
ocking Protective Well (Cap/expansion plus		Sample ID:	703	1007		Sar	nple Time	(4)	3	
Vell Lock Present?	Lock Condition		MS/MSD:	Yes	100	Duplic		Yes	No	~	
Other:											
	m.	TD.C.	Duplicate II	T53	1008			o. Time:	_	-	
OVERSIGHT SAMPLE	т:	TIME:	Sampled B	y: M	Y	Log R	eviewed By		FI		
						1	th Burlingto				West III

ARCADIS

Attachment 4

Validation Packages



Kalamazoo River Superfund Site Former Plainwell Impoundment Groundwater Sampling

Data Review

PLAINWELL, MICHIGAN

PCB, Metals and Miscellaneous Analyses

SDG# KAL459

Analyses Performed By: TestAmerica Laboratories Burlington, Vermont

Report: # 10202R Review Level: Tier III

Project: B0064539.0000.00500

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #KAL459 for samples collected in association with the Plainwell site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

	Sample Parent		Parent	Analysis							
Sample ID	Lab ID	Matrix	Collection Date	Sample	voc	svoc	PCB	MET	MISC		
TS31000	792624	Ground Water	4/13/2009				Χ	Х	Х		
TS40000	792625	Ground Water	4/13/2009				Χ	Х	Х		
TS40001	792626	Ground Water	4/13/2009				Χ	Х	Х		
TS40002	792627	Ground Water	4/14/2009				Χ	Х	Х		
TS40003	792628	Ground Water	4/14/2009	TS40002			Χ	Х	Х		
TS40004	792629	Ground Water	4/14/2009				Χ	Х	Х		
TS40005	792630	Ground Water	4/14/2009				Χ	Х	Х		
TS40006	792631	Ground Water	4/14/2009				Χ	Х	Х		
TS40007	792937	Ground Water	4/15/2009				Χ	Х	Х		
TS40008	792938	Ground Water	4/15/2009				Χ	Х	Х		
TS40009	792939	Ground Water	4/15/2009				Χ	Х	Χ		
TS40010	792940	Ground Water	4/15/2009				Χ	Х	Х		
TS40011	792941	Ground Water	4/15/2009				Χ	Х	Х		
TS40012	792942	Ground Water	4/16/2009				Χ	Х	Х		
TS40013	792943	Ground Water	4/16/2009				Χ	Х	Х		
TS40014	792944	Ground Water	4/16/2009				Χ	Х	Х		
TS40015	792945	Ground Water	4/16/2009	TS40014			Х	Х	Х		
TS40016	792962	Ground Water	4/17/2009				Х	Х	Х		
TS31001	792963	Ground Water	4/17/2009				Χ	Х	Х		
TS31002	792964	Ground Water	4/17/2009	TS31001			Х	Х	Х		

Note:

- 1. Miscellaneous parameters include total organic carbon (TOC), total suspended solids (TSS), total dissolved solids (TDS), chloride, sulfate, and alkalinity.
- Matrix spike/matrix spike duplicate/laboratory duplicate was performed on sample locations TS31001 and TS40013.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

		Rep	orted		mance ptable	Not
	Items Reviewed	No	Yes	No	Yes	Required
1.	Sample receipt condition		Х		Х	
2.	Requested analyses and sample results		Х		Х	
3.	Master tracking list		Х		Х	
4.	Methods of analysis		Х		Х	
5.	Reporting limits		Х		Х	
6.	Sample collection date		Х		Х	
7.	Laboratory sample received date		Х		Х	
8.	Sample preservation verification (as applicable)		Х		Х	
9.	Sample preparation/extraction/analysis dates		Х		Х	
10.	Fully executed Chain-of-Custody (COC) form		Х		Х	
11.	Narrative summary of QA or sample problems provided		Х		Х	
12.	Data Package Completeness and Compliance		Х		Х	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to (United Stated Environmental Protection Agency) USEPA Method 8082. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 and USEPA Region II (SOP HW-45, Revision 1).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

The data presented in this package has been derived using a procedure developed by TestAmerica as an attempt to improve the analytical process of calibration, identification and quantitation of PCBs as Aroclors. Key components of this procedure include:

Calibration

The response function of the electron capture detector is inherently non-linear. While significant linearization is achieved for this detector by electronic means, some non-linearity remains. Power function linearization is used to straighten the curve and allow the use of response factors for calibration purposes.

During the initial calibration, a response factor is calculated for each peak in the individual Aroclors. A weighted response factor calculation has been used to adjust for non-linearity at the low end of the calibration curve.

Identification

Peak retention times are relative. Retention times are in set windows relative to the time markers DCB and TCX. Time markers adjust for minor variations in column flow or instrument condition and allow the use of very tight windows which minimizes the number of false positive and false negative peak identifications.

The determination of which Aroclor or mixture of Aroclors will produce a chromatogram most similar to that of the residue is made by expressing the unknown sample chromatogram as a linear combination of the Aroclors. The most similar Aroclor or mixture of Aroclors is determined by using a least squares minimization of the difference between the unknown chromatogram and the linear combination of Aroclors. This is similar to the procedure presented by L.E. Silvon, P.M. Schumacher and A. Alford-Stevens for the determination of Aroclor composition from GC/MS level of chlorination results.

Identification/quantitation of Aroclors in samples is based on the combined response of two columns, typically RTX-5 and RTX-35. The pooling of response combines the unique qualities of both columns to derive a more defined Aroclor pattern which is less likely to be affected by interferents. Identification/quantitation data for the individual columns is provided in the package and can be used as a check on the combined column results.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
C/M 0.46 0.002	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4 °C
SW-846 8082	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for all Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires the surrogate compounds must exhibited recoveries within the method established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	ocations Surrogate	
TS40001	Tetrachloro-m-xylene	< LL but > 10%
TS40004	Decachlorobiphenyl	AC

Lower control limit (LL) Acceptable (AC)

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
> the upper control limit (OL)	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
< the lower control limit (EE) but > 10 %	Detect	J
< 10%	Non-detect	R
< 1076	Detect	٦
One surrogate exhibiting recovery outside the control limits	Non-detect	No Action
but > 10%	Detect	NO ACTION
Surrogates diluted below the calibration curve due to the	Non-detect	J^1
high concentration of a target compound.	Detect	J

A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the method established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the method established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the method established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TS40002/TS40003	All Aroclors	0.048 U	0.049 U	AC
TS40014/TS40015	All Aroclors	0.048 U	0.048 U	AC
TS31001/TS31002	Aroclor 1242	0.027 J	0.048 U	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

The determination of Aroclor presence is made by expressing the unknown sample chromatogram as a linear combination of the Aroclors. The most similar Aroclor or mixture of Aroclors is determined by using a least squares minimization of the difference between the unknown chromatogram and the linear combination of Aroclors.

All identified compounds met the specified criteria.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs; SW846 8082	Rep	orted		rmance eptable	Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Field blanks		Х		Х	
Laboratory Control Sample (LCS) %R		Х		Х	
Laboratory Control Sample Duplicate(LCSD) %R					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate(MSD) %R		Х		Х	
MS/MSD Precision (RPD)		Х		Х	
Field Duplicate (RPD)		Х		Х	
Surrogate Spike Recoveries		Х	Х		
Dilution Factor		Х		Х	
Moisture Content		Х		Х	
Tier III Validation					
Initial calibration %RSDs		Х		Х	
Continuing calibration %Ds		Х		Х	
System performance and column resolution		Х		Х	
Compound identification and quantitation		1			1
A. Quantitation Reports		Х		Х	
B. RT of sample compounds within the established RT windows		Х		Х	
C. Pattern identification		Х		Х	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X PPD role		X nt difference	

[%]RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Methods 6010B, 9060, 300.0, 310.1 and SM2540. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010B	Water	180 days from collection to analysis	Cooled @ 4 °C; preserved to a pH of less than 2.
5W 6 16 66 16B	Soil	180 days from collection to analysis	Cooled @ 4 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the instrument detection limit (IDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the IDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard

analysis are presented below in the CRDL standards evaluation table.

All CRDL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS analysis performed on sample locations TS40013 and TS31001 exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Calcium	110000	109000	0.9%
TS40002/TS40003	Magnesium	27300	27300	0%
1540002/1540003	Potsassium	1930	1760	AC
	Sodium	59700	59200	0.8%
TS40014/TS40015	Calcium	121000	129000	6.4%
1540014/1540015	Magnesium	36300	38600	6.1%

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Potsassium	3100	3220	AC
	Sodium	30000	31500	4.8%
	Calcium	75500	74300	1.6%
TS31001/TS31002	Magnesium	20600	20300	AC
1331001/1331002	Potsassium	2040	2050	AC
	Sodium	22400	22200	AC

AC Acceptable U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution performed on sample locations TS40013 and TS31001 exhibited %D within the control limit.

8. Furnace Analysis QC

No furnace analyses were performed on the samples.

9. Method of Standard Additions (MSA)

No samples were analyzed following the method of standard additions.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6000/7000	Rep	orted		rmance ptable	Not
·	No	Yes	No	Yes	Required
Inductively Coupled Plasma-Atomic Emission Spe	ectrometry	(ICP)			
Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		Х		Х	
Reporting limits (units)		X		Х	
Blanks					
A. Instrument Blanks		Х		X	
B. Method Blanks		X		Х	
C. Equipment/Field Blanks		Х		Х	
Laboratory Control Sample (LCS)		Х		X	
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		Х		Х	
Field/Lab Duplicate (RPD)		Х		X	
ICP Serial Dilution		X		X	
Reporting Limit Verification		Х		X	
Raw Data		X		Χ	
Tier III Validation					
Initial Calibration Verification		Х		Х	
Continuing Calibration Verification		Х		Х	
CRDL Standard		Х		Х	
ICP Interference Check		Х		Х	
Transcription/calculation errors present		Х		Х	
Reporting limits adjusted to reflect sample dilutions		Х		Х	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Total Organic Carbon by EPA 9060	Water	28 days from collection to analysis	Cooled @ 4 °C; preserved to a pH of less than 2.
Total Dissolved Solids By EPA 160.1	Water	7 days from collection to analysis	Cooled @ 4 °C.
Total Suspended Solids By EPA 160.2	Water	7 days from collection to analysis	Cooled @ 4 °C.
Chloride by EPA 300.0	Water	28 days from collection to analysis	Cooled @ 4 °C.
Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cooled @ 4 °C.
Alkalinity by EPA 310.1	Water	14 days from collection to analysis	Cooled @ 4 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL. No qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS analysis performed on sample locations TS40013 and TS31001 exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited a RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	TOC	4.5	4.5	AC
	TDS	619	610	1.4%
TS40002/TS40003	TSS	13.6	14.2	4.3%
1540002/1540003	Chloride	100	98	2.0%
	Sulfate	64	66	3.0%
	Alkalinity	310	300	3.2%
	TOC	7.4	7.5	1.3%
TS40014/TS40015	TDS	667	691	3.5%
	TSS	15.4	14.5	6.0%

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Chloride	44	43	2.2%
	Sulfate	180	180	0%
	Alkalinity	320	310	3.1%
	TOC	7.1	7.5	5.4%
	TDS	371	370	0.2%
TS31001/TS31002	TSS	7.7	8	3.8%
1531001/1531002	Chloride	43	43	0%
	Sulfate	34	34	0%
	Alkalinity	210	210	0%

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA Lloyd Kahn	Rep	orted		mance ptable	Not Required	
	No	Yes	No	Yes	Nequired	
Miscellaneous Instrumentation						
Tier II Validation						
Holding times		Х		Х		
Reporting limits (units)		Х		Х		
Blanks						
A. Method blanks		Х		Х		
B. Field blanks		Х		Х		
Laboratory Control Sample (LCS) %R		Х		Х		
Laboratory Control Sample Duplicate(LCSD) %R					Х	
LCS/LCSD Precision (RPD)					Х	
Matrix Spike (MS) %R		Х		Х		
Matrix Spike Duplicate(MSD) %R					Х	
MS/MSD Precision (RPD)					Х	
Lab/Field Duplicate (RPD)		Х		Х		
Dilution Factor		Х		Х		
Moisture Content		Х		Х		
Tier III Validation						
Initial calibration %RSD or correlation coefficient		Х		Х		
Continuing calibration %R		Х		Х		
Raw Data		Х		Х		
Transcription/calculation errors present				Х		
Reporting limits adjusted to reflect sample dilutions		X		X		

[%]RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference,

[%]D – difference

VALIDATION PERFORMED

BY: Jeffrey L. Davin

SIGNATURE:

DATE: May 20, 2009

PEER REVIEW: Dennis Capria

DATE: May 27, 2009

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

Lab Name:	TestAmerica Bur	lington	Lab Code:	STLV			
Contract:	27000	•	Case:	KZ00	SDG:	KAL459	
Phase Type:	WATER		La	b Sample ID:	792624		
Phase Weight:	1040.	(mL)	Da	ate Received:	04/15/09		
njection Volume:	1.0	(uL)	Da	te Extracted:	04/16/09	 	
Dilution Factor:	1.0		Da	ate Analyzed:	05/05/09		
% Solids:			Sul	fur Clean-up:	N	(Y/N))

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

EPA SAMPLE NO.

Sulfur Clean-up: N (Y/N)

				TS40	000
Lab Name: _	TestAmerica Bur	lington	Lab Code:STLV		
Contract:	27000		Case: KZOO	SDG: K	AL459
Phase Type:	WATER	***************************************	Lab Sample ID:	792625	
Phase Weight:	1020.	(mL)	Date Received:	04/15/09	
Injection Volume:	1.0	(uL)	Date Extracted:	04/16/09	
Dilution Factor:	1.0		Date Analyzed:	05/05/09	· · · · · · · · ·

% Solids:

CAS NO.	COMPOUND	CONCENTRATION	QUALIFIER
		ug/L	
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

1 -1 (141) AROCLOR ANALYSIS DATA SHEET

TS40001

						TS40001	
Lab Name: _	TestAmerica Bur	lington	Lab Code:	STLV			
Contract:	27000		Case:	KZ00	SDG:	KAL459	
Phase Type:	WATER	-	La	ab Sample ID:	792626		
Phase Weight:	1060.	(mL)	D	ate Received:	04/15/09		
njection Volume:	1.0	(uL)	Da	ate Extracted:	04/16/09		
Dilution Factor:	1.0		D	ate Analyzed:	05/05/09		
% Solids:			Su	lfur Clean-up:	N	(Y/	N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

Date Analyzed:

Sulfur Clean-up: N

EPA SAMPLE NO.

05/05/09

(Y/N)

						TS40002	
Lab Name: _	TestAmerica Burling	gton	_ Lab Code: _	STLV			
Contract:	27000	_	Case: _	KZ00	SDG:	KAL459	
Phase Type:	WATER		Lat	o Sample ID:	792627		
Phase Weight:	1040.	(mL)	Da	te Received:	04/15/09	<u> </u>	
Injection Volume:	1.0	(uL)	Dat	te Extracted:	04/16/09)	

Dilution Factor: 1.0

% Solids:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	Ų
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

LOWIN I AROCLOR ANALYSIS DATA SHEET

						TS40003	
Lab Name: .	TestAmerica Burl	ington	Lab Code:	STLV			
Contract:	27000	-	Case:	KZOO	SDG:	KAL459	
Phase Type:	WATER		La	ab Sample ID:	792628		
Phase Weight:	1020.	(mL)	D	ate Received: _	04/15/09		
njection Volume:	1.0	(uL)	Da	te Extracted:	04/16/09		
Dilution Factor:	1.0	-	D	ate Analyzed:	05/05/09		
% Solids:	***************************************		Sul	fur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

				TS40004	
Lab Name:	TestAmerica Burlingto	on	Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG: KAL4	59
Phase Type:	WATER		Lab Sample ID:	792629	
Phase Weight:	1040.	(mL)	Date Received:	04/15/09	
Injection Volume:	1.0	(uL)	Date Extracted:	04/16/09	
Dilution Factor:	1.0		Date Analyzed:	05/05/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	υ
11096-82-5	Aroclor-1260	0.048	U

					Т	S40005
Lab Name: ₋	TestAmerica Burlingt	on	Lab Code:	STLV		
Contract:	27000		Case:	KZOO	SDG:	KAL459
Phase Type:	WATER		La	b Sample ID:	792630	
Phase Weight:	1010.	(mL)	Da	te Received:	04/15/09	
Injection Volume:	1.0	(uL)	Da	te Extracted:	04/16/09	
Dilution Factor:	1.0		Da	ite Analyzed:	05/05/09	
% Solids:			Sulf	fur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.050	U
11104-28-2	Aroclor-1221	0.050	U
11141-16-5	Aroclor-1232	0.050	U
53469-21-9	Aroclor-1242	0.050	U
12672-29-6	Aroclor-1248	0.050	U
11097-69-1	Aroclor-1254	0.050	U
11096-82-5	Aroclor-1260	0.050	U

Lab Name:	TestAmerica Bui	dington	Lab Code: STLV	ר	rs40006
Lab Name	TOOD MITOTION DOI	migron	Lab Code:OTEV	<u>t</u>	
Contract:	27000		Case: KZOO	SDG:	KAL459
Phase Type:	WATER		Lab Comula ID.	792631	
riiase Type:	***************************************		Lab Sample ID:	792031	
Phase Weight:	1060.	(mL)	Date Received:	04/15/09	
Injection Volume:	1.0	(uL)	Date Extracted:	04/16/09	
Dilution Factor:	1.0		Date Analyzed:	05/05/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

EPA SAMPLE NO.

Sulfur Clean-up: N (Y/N)

				TS40007	
Lab Name: _	TestAmerica Bur	lington	Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG: KAL459	
Phase Type:	WATER		Lab Sample ID:	792937	
Phase Weight:	1030.	(mL)	Date Received:	04/17/09	
Injection Volume:	1.0	(uL)	Date Extracted:	04/20/09	
Dilution Factor:	1.0		Date Analyzed:	05/05/09	

% Solids: _____

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

EPA SAMPLE NO.

(Y/N)

05/05/09

Date Analyzed:

Sulfur Clean-up: N

				TS40008	
Lab Name: _	TestAmerica Burli	ngton	Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG: KAL459	
Phase Type:	WATER	·	Lab Sample ID:	792938	
Phase Weight:	1060.	(mL)	Date Received:	04/17/09	
Injection Volume:	1.0	(uL)	Date Extracted:	04/20/09	

Dilution Factor: 1.0

% Solids:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

Lab Name:	TestAmerica Bur	lington	Lab Code: STLV	TS40009	
Contract:	27000		Case: KZOO	SDG: KAL45	59
Phase Type:	WATER		Lab Sample ID:	792939	
Phase Weight:	1030.	(mL)	Date Received:	04/17/09	
Injection Volume:	1.0	(uL)	Date Extracted:	04/20/09	
Dilution Factor:	1.0		Date Analyzed:	05/05/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

EPA SAMPLE NO.

Sulfur Clean-up: N (Y/N)

						TS40010	
Lab Name: _	TestAmerica Bur	lington	Lab Code: _	STLV			
Contract:	27000	<u></u>	Case: _	KZOO	SDG:	KAL459	
Phase Type:	WATER		Lat	Sample ID:	792940		
Phase Weight:	1040.	(mL)	Da	te Received:	04/17/09)	
Injection Volume:	1.0	(uL)	Dat	e Extracted:	04/20/09)	
Dilution Factor:	1.0		Da	te Analyzed:	05/05/09)	

% Solids:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

						TS40011	
Lab Name: _	TestAmerica Burlin	gton	_ Lab Code: ,	STLV			
Contract:	27000		Case: _	KZOO	SDG:	KAL459	
Phase Type:	WATER		La	b Sample ID:	792941		
Phase Weight:	1030.	(mL)	Da	te Received:	04/17/09)	
Injection Volume:	1.0	(uL)	Da	te Extracted:	04/20/09)	
Dilution Factor:	1.0		Da	te Analyzed:	05/05/09)	
% Solide:			Sulf	ur Clean-un	N		(Y/N)

CAS NO.	COMPOUND	CONCENTRATION	QUALIFIER
		ug/L	
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

					'	TS40012	
Lab Name:	TestAmerica Burl	ington	Lab Code:	STLV			
Contract:	27000		Case:	KZOO	SDG:	KAL459	<u>-</u>
Phase Type:	WATER		La	ab Sample ID:	792942		
Phase Weight:	1040.	(mL)	D	ate Received:	04/17/09		
njection Volume:	1.0	(uL)	Da	ate Extracted:	04/20/09		
Dilution Factor:	1.0		D	ate Analyzed:	05/05/09		
% Solids:		POST-MANAGEMENT	Sul	fur Clean-up: _	N	(Y	/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER	
12674-11-2	Aroclor-1016	0.048	U	
11104-28-2	Aroclor-1221	0.048	U	
11141-16-5	Aroclor-1232	0.048	U	
53469-21-9	Aroclor-1242	0.048	U	
12672-29-6	Aroclor-1248	0.048	U	
11097-69-1	Aroclor-1254	0.048	U	
11096-82-5	Aroclor-1260	0.048	U	

Lab Name: _	TestAmerica Bur	lington	Lab Code: STLV	Т	S40013
Contract:	27000		Case: KZOO	SDG:	KAL459
Phase Type:	WATER	-	Lab Sample ID:	792943	
Phase Weight:	1055.	(mL)	Date Received:	04/17/09	
Injection Volume:	1.0	(uL)	Date Extracted:	04/20/09	
Dilution Factor:	1.0	-	Date Analyzed:	05/05/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER	
12674-11-2	Aroclor-1016	0.047	U	
11104-28-2	Aroclor-1221	0.047	U	
11141-16-5	Aroclor-1232	0.047	U	
53469-21-9	Aroclor-1242	0.047	U	
12672-29-6	Aroclor-1248	0.047	U	
11097-69-1	Aroclor-1254	0.047	U	
11096-82-5	Aroclor-1260	0.047	U	

Lab Name:	TestAmerica Burlin	aton	Lab Code:	STLV		TS40014	7,77
Contract:	27000	gion	Case:	KZOO	SDG:	KAL459	
Phase Type:	WATER		- La	b Sample ID:	792944		·- · · · · · · · · · · · · · · · · · ·
Phase Weight:	1040.	(mL)	Da	ite Received:	04/17/09		
Injection Volume:	1.0	(uL)	Da	te Extracted:	04/20/09		
Dilution Factor:	1.0	-	Da	nte Analyzed:	05/05/09		
% Solids:			Sulf	fur Clean-un:	N		Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

Lab Name:	TestAmerica Burlir	ngton	Lab Code: STLV	TS40	0015
Contract:	27000		Case: KZOO	SDG: K	AL459
Phase Type:	WATER	· amalan	Lab Sample ID:	792945	
Phase Weight:	1035.	(mL)	Date Received: _	04/17/09	
Injection Volume:	1.0	(uL)	Date Extracted:	04/20/09	
Dilution Factor:	1.0		Date Analyzed:	05/05/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	Ų
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

1.1.0	TestAmerica Burlir	anton	STIM	Т	⁻ S40016	
Lab Name: _	restamenta bunii	igion	Lab Code:STLV			لــ
Contract:	27000		Case: KZOO	SDG:	KAL459	
D	MATER			700000		
Phase Type:	WATER		Lab Sample ID: _	792962		
Phase Weight:	1040.	(mL)	Date Received: _	04/18/09		
Injection Volume:	1.0	(uL)	Date Extracted:	04/20/09		
Dilution Factor:	1.0	MACAGARA MACAGARA MACAGARA MACAGARA MACAGARA MACAGARA MACAGARA MACAGARA MACAGARA MACAGARA MACAGARA MACAGARA MA	Date Analyzed: _	05/05/09		
% Solids:			Sulfur Clean-un	N	(Y/N)	

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

Lab Name:	_ TestAmerica Burlingt	on	Lab Code:	STLV	Т	S31001
Contract:	27000		Case:	KZOO	SDG:	KAL459
Phase Type:	WATER		La	b Sample ID:	792963	
Phase Weight:	1045.	(mL)	Da	ate Received:	04/18/09	
Injection Volume:	1.0	(uL)	Date Extracted:		04/20/09	
Dilution Factor:	1.0		Da	ate Analyzed:	05/05/09	<u> </u>
% Solids:			Sul	fur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.027	J
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

					T	S31002	
Lab Name: _	TestAmerica Burlingt	on	Lab Code: _	STLV			
Contract:	27000		Case:	KZOO	SDG:	KAL459	
Phase Type:	WATER		Lab	Sample ID:	792964		
Phase Weight:	1040.	(mL)	Dat	te Received:	04/18/09		
Injection Volume:	1.0	(uL)	Dat	e Extracted:	04/20/09		
Dilution Factor:	1.0		Dat	te Analyzed:	05/05/09	····	
% Solids:		_	Sulf	ur Clean-up:	N		(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Average 404C		
11104-28-2	Aroclor-1016 Aroclor-1221	0.048	U
11141-16-5	Aroclor-1221	0.048	<u> </u>
53469-21-9	Aroclor-1232	0.048	U
12672-29-6	Aroclor-1248	0.048	
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

2090 B

EPA SAMPLE NO.

TS31000)	

Lab Name: T	estAmer:	ica Burlington	Contrac	:t: <u>29000</u>				
Lab Code: S	STLV	Case No.:	KZOO SAS	No.:		SDG No	.: <u>K</u>	L459
Matrix (soil/	water):	WATER		Lab Sample ID:		792624	Į	
Level (low/me	ed):	LOW		Date Received:		04/15/	′09	
% Solids: 0	0.0							
		Concentration U	nits (ug/L or mg/	kg dry weight):		UG/L		
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	73300			P	
		7439-95-4	Magnesium	19600			P	
		7440-23-5	Sodium	20400	1		P	

Potassium

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	No.
Comments:					
-					

USEPA-CLP FORMS -1-

INORGANIC ANALYSES DATA SHEET

								EPA SAMPLE NO.
								TS31001
Lab Name:	TestAmer	ica Burlington	Contra	act: <u>29000</u>				
Lab Code:	STLV	Case No.:	KZOO SA	S No.:		SDG N	o.:	KAL459
Matrix (soi]	L/water):	WATER		Lab Sample ID	:	79296	3	
Level (low/n	ned):	LOW		Date Received	:	04/18	3/09	
% Solids:	0.0							-
		•						
		Concentration U	nits (ug/L or mo	g/kg dry weight):		UG/I	1	
								_
		CAS No.	Analyte	Concentration	С	Q	М]
		7440-70-2	Calcium	75500	-		l P	<u> </u>
		1 1 4 4 0 7 0 E	1					
		7439-95-4	Magnesium	20600	<u>. </u>	<u> </u>	P	<u>-</u> '
								
		7439-95-4	Magnesium	20600	 B		P	- - - - -

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				
_				
-			····	
-				

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

							TS31002
Lab Name: <u>TestAme</u>	rica Burlington	Contrac	et: <u>29000</u>		<u> </u>	········	
Lab Code: STLV	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL459
Matrix (soil/water)	WATER		Lab Sample ID:		79296	4	
Level (low/med):	LOW		Date Received:		04/18	/09	
% Solids: 0.0							
	Concentration Un	uits (ug/L or mg/	/kg dry weight):		UG/L		_
	CAS No.	Analyte	Concentration	С	Q	М	

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	74300			P
7439-95-4	Magnesium	20300			P
7440-23-5	Sodium	22200	Ī		P
7440-09-7	Potassium	2050	В		P

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
_					
_					
-					

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

TS40000	

Lab Name: <u>TestAmerica Burlington</u>	_ Contract: 29000	
Lab Code: STLV Case No.: KZO	O SAS No.:	SDG No.: KAL459
Matrix (soil/water): WATER	Lab Sample ID:	792625
Level (low/med): LOW	Date Received:	04/15/09

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	152000	1		P
7439-95-4	Magnesium	27700	Ī		l P
7440-23-5	Sodium	11600	1		P
7440-09-7	Potassium	3450	В		P

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

								EPA SAMPLE NO.
								TS40001
Lab Name:	TestAmer	rica Burlington	Contra	act: 29000				
Lab Code:	STLV	_ Case No.:	KZOO SAS	S No.:		SDG No	· . :	KAL459
Matrix (soil	./water):	WATER		Lab Sample ID:	:	79262	6	
Level (low/m	ned):	LOW		Date Received:	:	04/15	/09	
% Solids:	0.0							
								
		Concentration U	nits (ug/L or mg	/kg dry weight):		UG/L		
								
		CAS No.	Analyte	Concentration	С	Q	м]
		7440-70-2	Calcium	111000			P	1
		7439-95-4	Magnesium	23800	T		P	
		7440-23-5	Sodium	27000	Ì	1	P	i
		7440-09-7	Potassium	699	B	<u>.</u>	P	i

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. TS40002

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						1		
Lab Name:	TestAmer	ica Burlington	Contr	act: 29000				
Lab Code:	STLV	Case No.:	KZOO SZ	AS No.:		SDG No	.:	KAL459
Matrix (soi	.l/water):	WATER	***************************************	Lab Sample ID:		79262	7	
Level (low/	med):	LOW		Date Received:		04/15,	/09	
% Solids:	0.0	_						
		Concentration U	nits (ug/L or m	g/kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	110000	+		P	i

27300

59700

1930

B

Magnesium

Potassium

 ${\tt Sodium}$

7439-95-4

7440-23-5

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				
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INORGANIC ANALYSES DATA SHEET

27300

59200

1760

EPA SAMPLE NO.

P

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TS40003	
1340003	

Lab Name:	TestAmer	ica Burlington	Cont	ract: 29000				
Lab Code:	STLV	Case No.:	KZOO S	SAS No.:		SDG No	.:	KAL459
Matrix (soi	l/water):	WATER		Lab Sample ID:		792628	3	
Level (low/	med):	LOW		Date Received:		04/15/	/09	
% Solids:	0.0	_						
		Concentration Ur	its (ug/L or	mg/kg dry weight):		UG/L		
		CAS No.	Analyte	Concentration	С	Q	м	
		7440-70-2	Calcium	109000			P	<u>'</u>

Magnesium

Potassium

Sodium

7439-95-4

7440-23-5

7440-09-7

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

Lab Name: $\underline{\mathtt{T}}$	estAmerica 1	Burlington	Con	tract:	29000	<u></u>		
Lab Code: <u>S</u>	TLV	Case No.:	KZ00	SAS No.:		SDG No.	: <u>KAL459</u>	
Matrix (soil/	water): W	ATER	· · · · · · · · · · · · · · · · · · ·	Lab	Sample ID:	792629		
Level (low/med	d): <u>LOW</u>			Dat	e Received:	04/15/0	09	
% Solids: <u>0</u>	. 0							
	Conce	entration Uni	ts (ug/L or	mg/kg dr	y weight):	UG/L		
			31				 1	

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	92200			P
7439-95-4	Magnesium	21700	1		P
7440-23-5	Sodium	69500			P
7440-09-7	Potassium	1600	В		P

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				

INORGANIC ANALYSES DATA SHEET

29500

51100

1120 B

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P

EPA SAMPLE NO.

		110	•

	TS40005		

Lab Name:	TestAmer:	ica Burlington	Cont	ract:	29000					
Lab Code:	STLV	Case No.:	KZOO	SAS No.:		_	SDG No	·.:	KAL459	
Matrix (soil	./water):	WATER		Lab	Sample ID:		79263	0		
Level (low/m	ned):	LOW		Date	Received:		04/15	/09		
% Solids:	0.0									
		Concentration Un	nits (ug/L or	mg/kg dry	weight):		UG/L	***		
		CAS No.	Analyte	Concer	itration	С	Q	М		
		7440-70-2	Calcium		198000			P		

Magnesium

Potassium

Sodium

7439-95-4

7440-23-5

7440-09-7

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

TS40	006	

Lab Name:	TestAmeri	ica Burlington	<u>.</u>	Contract:	29000		M
Lab Code:	STLV	Case No.:	KZOO	SAS No.:		SDG No.:	KAL459
Matrix (soil	/water):	WATER	· · · · · · · · · · · · · · · · · · ·	La	o Sample ID:	792631	
Level (low/m	ed):	LOW		Da	te Received:	04/15/09	
% Solids:	0.0						
		Concentration Un	uits (ug/L	or mg/kg d	ry weight):	UG/L	

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	92200			P
7439-95-4	Magnesium	25700			P
7440-23-5	Sodium	42100			P
7440-09-7	Potassium	1540	B	***************************************	P

Color Before:	colorless	Clarity Before:	clear	Texture:	711
Color After:	colorless	Clarity After:	clear	Artifacts:	-
Comments:					
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

								TS40007
Lab Name:	TestAmer	ica Burlington	Contrac	et: <u>29000</u>				
Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL459
Matrix (soi	l/water):	WATER		Lab Sample ID:		79293	7	
Level (low/	med):	LOW		Date Received:		04/17	/09	
% Solids:	0.0	_						
		Concentration Un	its (ug/L or mg/	kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	115000			P
7439-95-4	Magnesium	27700	Ī		P
7440-23-5	Sodium	73400	İ		P
7440-09-7	Potassium	2120	В	·	P

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
					

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

								TS40008
Lab Name:		rica Burlingt		tract: 29000				
Lab Code:	STLV	Case No.	: KZOO	SAS No.:		SDG No	· . :	KAL459
Matrix (soi	.1/water):	WATER		Lab Sample ID	:	79293	8	
Level (low/	med):	LOW		Date Received	:	04/17	/09	·
% Solids:	0.0							
		Concentration	IIIni ha (ana/I ana					
		concentration	Onits (ug/L or	mg/kg dry weight):		UG/L		
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	141000	+		P	
		7439-95-4	Magnesium	32100			P	
		7440-23-5	Sodium	53800			P	
		7440-09-7	Potassium	2810	В		P	
Color Bef	ore: <u>col</u>	orless	Clarity Before:	clear	Te	exture:	_	

Comments:

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

TS40009

					l		201000
Lab Name: TestAmer	rica Burlingtor	Contra	ct: <u>29000</u>				
Lab Code: STLV	Case No.:	KZOO SAS	5 No.:	_	SDG No	o.:	KAL459
Matrix (soil/water):	WATER		Lab Sample ID:		79293	9	
Level (low/med):	LOW		Date Received:		04/17	/09	
% Solids: 0.0							
	Concentration (Jnits (ug/L or mg	/kg dry weight):		UG/L	1	_
	CAS No.	Analyte	Concentration	С	Q	М	
	7440-70-2	Calcium	105000			P	
	7439-95-4	Magnesium	27100			P	
	7440-23-5	Sodium	80300			P	

Potassium

7440-09-7

2100 B

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

74900

1880 B

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EPA SAMPLE NO. TS40010

									TS40010
Lab Name:	TestAmer	rica Burlington	Cont	tract: <u>29</u>	000		L		
Lab Code:	STLV	Case No.:	KZOO	SAS No.:			SDG N	o.:	KAL459
Matrix (soil	/water):	WATER		Lab Sa	ample ID:		79294	10	
Level (low/m	ied) :	LOW		Date F	Received:		04/17	/09	
% Solids:	0.0								
		Concentration U	nits (ug/L or	mg/kg dry w	weight):		UG/L	J	_
		CAS No.	Analyte	Concentr	ration	С	Q	М	
		7440-70-2	Calcium		121000			P	
		7439-95-4	Magnesium		29500	<u>. </u>		l p	

Sodium

Potassium

7440-23-5

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

			inologinge And	MITTER DATA SHEET				EPA SAMPLE NO.			
								TS40011			
Lab Name:	TestAmer	rica Burlington	Contra	ct: 29000							
Lab Code:	STLV	_ Case No.:	KZOO SAS	No.:		SDG No	o.:	KAL459			
Matrix (so	il/water):	WATER	***************************************	Lab Sample ID:	:	79294	1				
Level (low,	/med):	LOW		Date Received:		04/17	/09				
% Solids:	0.0	_									
		Concentration Un	nits (ug/L or mg	/kg dry weight):		UG/L		_			
		CAS No.	Analyte	Concentration	С	Q	М				
		7440-70-2	Calcium	174000			P	1			
		7439-95-4	Magnesium	28300	İ		P				
		7440-23-5	Sodium	55200		l	P				
		7440-09-7	Potassium	2000	В		P				

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:		17.11.11.11.11.11.11.11.11.11.11.11.11.1			
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INORGANIC ANALYSES DATA SHEET

142000

29300

53000

1700 B

EPA SAMPLE NO.

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TS	40012	·	

Lab Name:	TestAmer	ica Burlington	Contrac	t: 29000		<u> </u>		
Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL459
Matrix (soil	L/water):	WATER		Lab Sample ID:		792942	2	······
Level (low/m	ned):	LOW		Date Received:		04/17/	/09	
% Solids:	0.0	-						
		Concentration Un	its (ug/L or mg/	kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	

Calcium

Sodium

Magnesium

Potassium

7440-70-2

7439-95-4

7440-23-5

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO

<u> </u>		 OFMER THE	140.	
TS40013	_	 TS40013		

				1840013
Lab Name:	TestAmeric	ca Burlington	Contract: <u>29000</u>	
Lab Code:	STLV	Case No.: KZOO	SAS No.:	SDG No.: KAL459
Matrix (soil	L/water):	WATER	Lab Sample ID:	792943
Level (low/m	\mathtt{ned}): $\underline{\mathtt{L}}$	OW	Date Received:	04/17/09
% Solids:	0.0			
	C	oncentration Units (ug/L	or mg/kg dry weight):	UG/L

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	119000			P
7439-95-4	Magnesium	27800			P
7440-23-5	Sodium	68400			P
7440-09-7	Potassium	1940	[B		P

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	-
Comments:			7.473		

INORGANIC ANALYSES DATA SHEET

	LPA	SAMPLE	NO.
		TS40014	
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			1240014
Lab Name: <u>TestAr</u>	merica Burlington	Contract: 29000	
Lab Code: STLV	Case No.: KZOO	SAS No.:	SDG No.: KAL459
Matrix (soil/water): WATER	Lab Sample ID:	792944
Level (low/med):	LOW	Date Received:	04/17/09
% Solids: 0.0			
	Concentration Units (ug	g/L or mg/kg dry weight):	UG/L

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	121000			P
7439-95-4	Magnesium	36300	İ		P
7440-23-5	Sodium	30000	ÌÌ		P
7440-09-7	Potassium	3100	B		P

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:			71	
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INORGANIC ANALYSES DATA SHEET

38600

31500

3220 B

EPA SAMPLE NO.

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TS40015	
1340013	

							1340013
Lab Name: TestAmer	rica Burlington	Contrac	t: <u>29000</u>		··············		
Lab Code: STLV	_ Case No.:	KZOO SAS	No.:	_	SDG No	.:	KAL459
Matrix (soil/water):	WATER		Lab Sample ID:		792945	5	
Level (low/med):	LOW		Date Received:		04/17/	/09	
% Solids: 0.0	_						
	Concentration Un	uits (ug/L or mg/	kg dry weight):		UG/L		_
	CAS No.	Analyte	Concentration	С	Q	М	
	7440-70-2	Calcium	129000			₽	

Magnesium

Potassium

Sodium

7439-95-4

7440-23-5

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

							-	EPA SAMPLE NO.
								TS40016
Lab Name:	TestAmer	cica Burlington	Contra	act: 29000				
Lab Code:	STLV	Case No.:	KZOO SA	S No.:		SDG No	o.:	KAL459
Matrix (soi]	l/water):	WATER		Lab Sample ID	:	79296	2	
Level (low/n	med):	LOW		Date Received:	:	04/18	/09	
% Solids:	0.0							
, borras.	0.0							
		Concentration II	nite (na/I on m	g/kg dry weight):		TTC /T		
		CONCENCTACION O	nics (ag/i or mi	g/kg dry weight):		UG/L		
				T		Т	1	Ī
		CAS No.	Analyte	Concentration	C	Q	М	
		7440 70 0	Calcium	92100	+	<u> </u>	P	
		7440-70-2	Jazozam	72100		1	_	
		7439-95-4	Magnesium	24600	1		P	
			<u> </u>					- - -
		7439-95-4	Magnesium	24600	 B	<u> </u> 	P	

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				
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Sample Report Summary

Client Sample No.

TS31000

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792624

Matrix: WATER

Client: BBLKAL

Date Received: 04/15/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	361	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	7.6	
5310	Organic Carbon, Total	04/17/09	BLKTO041709A	mg/L	1	1.0	7.9	
		ļ						

Sample Report Summary

Client Sample No.

TS40000

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792625

Matrix: WATER

Client: BBLKAL

Date Received: 04/15/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	657	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	0.6	!
5310	Organic Carbon, Total	04/22/09	BLKT0042209B	mg/L	1	1.0	20.6	
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Sample Report Summary

Client Sample No.

TS40001

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792626

Matrix: WATER

Client: BBLKAL

Date Received: 04/15/09

% Solids:

	Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
	2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	553	
	2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	17.0	
	5310	Organic Carbon, Total	04/17/09	BLKTO041709A	mg/L	1	1.0	5.2	
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Sample Report Summary

Client Sample No.
TS40002

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792627

Matrix: WATER

Client: BBLKAL

Date Received: 04/15/09

% Solids:

	Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
Ī	2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	619	
	2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	13.6	
	5310	Organic Carbon, Total	04/17/09	BLKT0041709A	mg/L	1	1.0	4.5	
							i		
							i		
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							3		

Sample Report Summary

Client Sample No.

TS40003

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792628

Matrix: WATER

Client: BBLKAL

Date Received: 04/15/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	610	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	14.2	
5310	Organic Carbon, Total	04/17/09	BLKTO041709A	mg/L	1	1.0	4.5	
		3						
							Annual Control of the	
					-			

Sample Report Summary

Client Sample No.

TS40004

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792629

Matrix: WATER

Client: BBLKAL

Date Received: 04/15/09

% Solids:

Mathad	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
Method	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	568	
2540								
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	13.3	
5310	Organic Carbon, Total	04/17/09	BLKTO041709A	mg/L	1	1.0	2.5	
		}						
								}

Sample Report Summary

Client Sample No.

TS40005

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792630

Matrix: WATER

Client: BBLKAL

Date Received: 04/15/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	918	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	25.4	
5310	Organic Carbon, Total	04/22/09	BLKTO042209B	mg/L	1	1.0	16.2	
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			5					

Sample Report Summary

Client Sample No.

TS40006

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792631

Matrix: WATER

Client: BBLKAL

Date Received: 04/15/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	495	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	10.1	
5310	Organic Carbon, Total	04/17/09	BLKTO041709A	mg/L	1	1.0	3.1	
			1					
								VALUE OF THE PARTY

Sample Report Summary

Client Sample No.

TS40007

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792937

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	655	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	11.7	
5310	Organic Carbon, Total	04/22/09	BLKTO042209A	mg/L	1	1.0	4.8	
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Sample Report Summary

Client Sample No.

TS40008

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792938

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	746	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	8.9	
5310	Organic Carbon, Total	04/22/09	BLKTO042209A	mg/L	1	1.0	6.7	
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Sample Report Summary

Client Sample No.

TS40009

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792939

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	625	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	9.1	
5310	Organic Carbon, Total	04/22/09	BLKTO042209A	mg/L	1	1.0	2.6	
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Sample Report Summary

Client Sample No.

TS40010

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792940

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	665	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	21.3	
5310	Organic Carbon, Total	04/22/09	BLKTO042209A	mg/L	1	1.0	3.7	
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Sample Report Summary

Client Sample No.

TS40011

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792941

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	777	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	12.9	
5310	Organic Carbon, Total	04/22/09	BLKT0042209A	mg/L	1	1.0	6.9	
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Sample Report Summary

Client Sample No.

TS40012

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792942

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	706	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	20.1	
5310	Organic Carbon, Total	04/22/09	BLKTO042209A	mg/L	1	1.0	6.1	
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Sample Report Summary

Client Sample No.

TS40013

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792943

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	639	
Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	16.4	
Organic Carbon, Total	04/22/09	BLKTO042209A	mg/L	1	1.0	4.6	
		144					i.
	Total Dissolved Solids Total Suspended Solids	Total Dissolved Solids 04/20/09 Total Suspended Solids 04/20/09	Total Dissolved Solids 04/20/09 BLKDS042009A Total Suspended Solids 04/20/09 BLKTS042009A	Total Dissolved Solids 04/20/09 BLKDS042009A mg/L Total Suspended Solids 04/20/09 BLKTS042009A mg/L	Total Dissolved Solids 04/20/09 BLKDS042009A mg/L 1 Total Suspended Solids 04/20/09 BLKTS042009A mg/L 0	Total Dissolved Solids 04/20/09 BLKDS042009A mg/L 1 5.0 Total Suspended Solids 04/20/09 BLKTS042009A mg/L 0 0.50	Total Dissolved Solids 04/20/09 BLKDS042009A mg/L 1 5.0 639 Total Suspended Solids 04/20/09 BLKTS042009A mg/L 0 0.50 16.4

Sample Report Summary

Client Sample No.

TS40014

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792944

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	667	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	15.4	
5310	Organic Carbon, Total	04/22/09	BLKTO042209A	mg/L	1	1.0	7.4	
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Sample Report Summary

Client Sample No.

TS40015

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792945

Matrix: WATER

Client: BBLKAL

Date Received: 04/17/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	691	
2540	Total Suspended Solids	04/20/09	BLKT\$042009A	mg/L	0	0.50	14.5	
5310	Organic Carbon, Total	04/22/09	BLKTO042209A	mg/L	1	1.0	7.5	
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Sample Report Summary

Client Sample No.
TS40016

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792962

Matrix: WATER

Client: BBLKAL

Date Received: 04/18/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	574	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	6.6	
5310	Organic Carbon, Total	04/22/09	BLKTO042209B	mg/L	1	1.0	2.0	
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WET CHEMISTRY

Sample Report Summary

Client Sample No.

TS31001

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792963

Matrix: WATER

Client: BBLKAL

Date Received: 04/18/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	371	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.50	7.7	
5310	Organic Carbon, Total	04/22/09	BLKTO042209B	mg/L	1	1.0	7.1	
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WET CHEMISTRY

Sample Report Summary

Client Sample No.

TS31002

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL459

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 792964

Matrix: WATER

Client: BBLKAL

Date Received: 04/18/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	04/20/09	BLKDS042009A	mg/L	1	5.0	370	
2540	Total Suspended Solids	04/20/09	BLKTS042009A	mg/L	0	0.60	8.0	
5310	Organic Carbon, Total	04/22/09	BLKTO042209B	mg/L	1	1.0	7.5	
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Analytical Data

Client: TestAmerica Laboratories, Inc.

Job Number: 500-18371-1

	•		General Che	emistry				
Client Sample ID	: TS31000		General Give	ou y				
Lab Sample ID: Client Matrix:	500-18371-1 Water						Sampled: 04/13/2009 142 Received: 04/21/2009 101	
Analyte		Result	Qual Units	MDL		RL	Dil M ethod	
Sulfate		32	mg/L	0.53		2.0	10 300.0	_
	Anly Batch:	500-62399	Date Analyzed	04/24/2009	1104			
Chloride		39	mg/L	0.16		2.0	10 300.0	
	Anly Batch:		Date Analyzed	04/24/2009	1104			
Alkalinity		200	mg/L	1.1		5.0	1.0 310.1	
•	Anly Batch:	500-62347	Date Analyzed	04/24/2009	0750			
Client Sample ID	: TS40000							
Lab Sample ID: Client Matrix:	500-18371-2 Water						Sampled: 04/13/2009 160 Received: 04/21/2009 101	
Analyte		Result	Qual Units	MDL		RL	Dil Method	
Chloride		28	mg/L	0.16		2.0	10 300.0	
	Anly Batch:	500-62399	Date Analyzed	04/24/2009	1118			
Sulfate		130	mg/L	1.1		4.0	20 300.0	
	Anly Batch:	500-62708	Date Analyzed	04/29/2009	1222			
Alkalinity		320	mg/L	1.1		5.0	1.0 310.1	
•	Anly Batch:	500-62347	Date Analyzed	04/24/2009	0758			
Client Sample ID	: TS40001			. -				
Lab Sample ID: Client Matrix:	500-18371-3 Water						e Sampled: 04/13/2009 16 ⁻ e Received: 04/21/2009 10 ⁻	
Analyte		Result	Qual Units	MDL		RL	Dil Method	
Chloride	-	42	mg/L	0.16		2.0	10 300.0	
	Anly Batch:	500-62399	Date Analyzed	04/24/2009	1132			
Sulfate		150	mg/L	1.1		4.0	20 300.0	
	Anly Batch:	500-62708	Date Analyzed	04/29/2009	1236			
Alkalinity		210	mg/L	1.1		5.0	1.0 310.1	
	Anly Batch:	500-62347	Date Analyzed	04/24/2009	0805			

TestAmerica Laboratories, Inc.

Job Number:

500-18371-1

General	Chemistry
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Client Sample ID: TS40002

Lab Sample ID:

500-18371-4

Client Matrix:

Water

Date Sampled: 04/14/2009

1055

Date Received: 04/21/2009

1010

Analyte	Result	Qual Units	MDL	RL	Dil	Method
Sulfate	64	mg/L	0.53	2.0	10	300.0
	Anly Batch: 500-62399	Date Analyzed	04/24/2009	1147		
Chloride	100	mg/L	0.32	4.0	20	300.0
	Anly Batch: 500-62708	Date Analyzed	04/29/2009	1250		
Alkalinity	310	mg/L	1.1	5.0	1.0	310.1
·	Anly Batch: 500-62347	Date Analyzed	04/24/2009	0814		

Client Sample ID: TS40003

Lab Sample ID:

500-18371-5

Client Matrix:

Water

Date Sampled: 04/14/2009

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Date Received: 04/21/2009

1010

Analyte	Result	Qual Units MDL	RL	Dil Method	
Sulfate	66	mg/L 0.53	2.0	10 300.0	
	Anly Batch: 500-62399	Date Analyzed 04/24/2009	1201		
Chloride	98	mg/L 0.32	4.0	20 300.0	
,	Anly Batch: 500-62708	Date Analyzed 04/29/2009	1305		
Alkalinity	300	mg/L 1.1	5.0	1.0 310.1	
·	Anly Batch: 500-62347	Date Analyzed 04/24/2009	0821		

Client Sample ID: TS40004

500-18371-6

Lab Sample ID: Client Matrix:

Water

Date Sampled: 04/14/2009

1200

Date Received: 04/21/2009

1010

Dil Method RL Qual Units MDL Analyte Result 29 mg/L 0.53 2.0 10 300.0 Sulfate Anly Batch: 500-62399 Date Analyzed 04/24/2009 1215 0.32 4.0 20 300.0 120 mg/L Chloride Date Analyzed 04/29/2009 1347 Anly Batch: 500-62708 1.0 310.1 280 mg/L 1.1 5.0 Alkalinity Anly Batch: 500-62347 Date Analyzed 04/24/2009 0828

TestAmerica Laboratories, Inc.

Job Number:

500-18371-1

Conoral	Chemistry

Client Sample ID: TS40005

Lab Sample ID: 500-18371-7 Client Matrix:

Water

Date Sampled: 04/14/2009 1350

Date Received: 04/21/2009 1010

Analyte		Result	Qual	Units	MDL		RL	Dil	Method
Sulfate		160		mg/L	1.1		4.0	20	300.0
	Anly Batch:	500-62708	Date Ar	nalyzed	04/29/2009	1401			
Chloride		89		mg/L	0.32		4.0	20	300.0
	Anly Batch:	500-62708	Date Ar	nalyzed	04/29/2009	1401			
Alkalinity		420		mg/L	1.1		5.0	1.0	310.1
	Anly Batch:	500-62347	Date Ar	nalyzed	04/24/2009	0837			

Client Sample ID: TS40006

Lab Sample ID: 500-18371-8 Client Matrix:

Water

Date Sampled: 04/14/2009 1420

Date Received: 04/21/2009 1010

Analyte		Result	Qual U	nits MDL	RL	Dil	Method
Sulfate		63	m	ng/L 0.53	2.0	10	300.0
	Anly Batch:	500-62399	Date Analy	zed 04/24/2009	1244		
Chloride		43	m	ng/L 0.16	2.0	10	300.0
	Anly Batch:	500-62399	Date Analy	zed 04/24/2009	1244		
Alkalinity		280	m	ng/L 1.1	5.0	1.0	310.1
	Anly Batch:	500-62347	Date Analy	zed 04/24/2009	0845		

Client Sample ID: TS40007

Lab Sample ID: 500-18371-9 Client Matrix:

Water

Date Sampled: 04/15/2009 Date Received: 04/21/2009 1010

1030

Analyte		Result	Qual	Units	MDL		RL	Dil	Method
Sulfate		43		mg/L	0.53		2.0	10	300.0
	Anly Batch: 5	600-62399	Date Ar	nalyzed	04/24/2009	1606			
Chloride		130		mg/L	0.32		4.0	20	300.0
	Anly Batch: 5	500-62708	Date Ar	nalyzed	04/29/2009	1415			
Alkalinity		340		mg/L	1.1		5.0	1.0	310.1
	Anly Batch: 5	00-62347	Date Ar	nalyzed	04/24/2009	0906			

Client: TestAmerica Laboratories, Inc. Job Number:

500-18371-1

General	Chemistry
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Client Sample ID: TS40008

Lab Sample ID:

500-18371-10

Client Matrix:

Water

Date Sampled: 04/15/2009

1040

Date Received: 04/21/2009 1010

Analyte		Result	Qual	Units	MDL		RL	Dil	Method
Sulfate		130		mg/L	1.1		4.0	20	300.0
	Anly Batch:	500-62708	Date Ar	nalyzed	04/29/2009	1430			
Chloride		80		mg/L	0.32		4.0	20	300.0
	Anly Batch:	500-62708	Date Ar	nalyzed	04/29/2009	1430			
Alkalinity		310		mg/L	1.1		5.0	1.0	310.1
	Anly Batch:	500-62347	Date Ar	nalyzed	04/24/2009	0914			

Client Sample ID: TS40009

Lab Sample ID:

500-18371-11

Client Matrix: Water Date Sampled: 04/15/2009 1150

Date Received: 04/21/2009 1010

Analyte		Result	Qual	Units	MDL		RL	Dil	Method
Sulfate		42		mg/L	1.1		4.0	20	300.0
	Anly Batch:	500-62708	Date A	nalyzed	04/29/2009	1444			
Chloride		160		mg/L	0.32		4.0	20	300.0
	Anly Batch:	500-62708	Date A	nalyzed	04/29/2009	1444			
Alkalinity		300		mg/L	1.1		5.0	1.0	310.1
	Anly Batch:	500-62347	Date A	nalyzed	04/24/2009	0922			

Client Sample ID: TS40010

Lab Sample ID:

500-18371-12

Client Matrix: Water

Date Sampled: 04/15/2009

1325

Date Received: 04/21/2009 1010

Analyte Result Qual Units MDL RL Dil Method 82 mg/L 4.0 20 300.0 Sulfate 1.1 Anly Batch: 500-62708 Date Analyzed 04/29/2009 1458 20 Chloride mg/L 0.32 4.0 300.0 120 1458 Anly Batch: 500-62708 Date Analyzed 04/29/2009 Alkalinity 320 mg/L 1.1 5.0 1.0 310.1 Anly Batch: 500-62347 Date Analyzed 04/24/2009 0930

TestAmerica Laboratories, Inc.

Job Number:

500-18371-1

General	Chemistry
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Client Sample ID: TS40011

Lab Sample ID: 500-18371-13

Client Matrix:

Water

Date Sampled: 04/15/2009 1335

Date Received: 04/21/2009 1010

Analyte	Result	Qual Units	MDL	RL	Dil	Method
Sulfate	140	mg/L	1.1	4.0	20	300.0
	Anly Batch: 500-6270	8 Date Analyzed	04/29/2009	1513		
Chloride	110	mg/L	0.32	4.0	20	300.0
	Anly Batch: 500-6270	8 Date Analyzed	04/29/2009	1513		
Alkalinity	360	mg/L	1.1	5.0	1.0	310.1
-	Anly Batch: 500-6234	7 Date Analyzed	04/24/2009	0938		

Client Sample ID: TS40012

Lab Sample ID: 500-18371-14

Client Matrix:

Water

Date Sampled: 04/16/2009 1050

Date Received: 04/21/2009 1010

Analyte	Result	Qual Units MDL	RL	Dil Meth	od
Sulfate	110	mg/L 1.1	4.0	20 300.0)
	Anly Batch: 500-62708	Date Analyzed 04/29/2009	1527		
Chloride	93	mg/L 0.32	4.0	20 300.0)
	Anly Batch: 500-62708	Date Analyzed 04/29/2009	1527		
Alkalinity	350	mg/L 1.1	5.0	1.0 310.1	I
	Anly Batch: 500-62347	Date Analyzed 04/24/2009	0945		

Client Sample ID: TS40013

Lab Sample ID: 500-18371-15 Client Matrix:

Water

Date Sampled: 04/16/2009 1100

Date Received: 04/21/2009 1010

Analyte		Result	Qual (Units	MDL		RL.	Dil	Method
Sulfate		67		mg/L	1.1		4.0	20	300.0
	Anly Batch:	500-62708	Date Analy	lyzed 0	4/29/2009	1541			
Chloride		110	r	mg/L	0.32		4.0	20	300.0
	Anly Batch:	500-62708	Date Anal	yzed 0	4/29/2009	1541			
Alkalinity		320	r	mg/L	1.1		5.0	1.0	310.1
·	Anly Batch:	500-62347	Date Anal	lyzed 0	4/24/2009	0954			

TestAmerica Laboratories, Inc.

Job Number:

500-18371-1

Client Sample ID: TS40014

Lab Sample ID:

500-18371-16

Client Matrix:

Water

Date Sampled: 04/16/2009

1340

Date Received: 04/21/2009

1010

Analyte		Result	Qual	Units	MDL		RL	Dil	Method
Sulfate		180		mg/L	1.1		4.0	20	300.0
	Anly Batch: 50	00-62708	Date Ar	nalyzed	04/29/2009	1653			
Chloride		44		mg/L	0.32		4.0	20	300.0
	Anly Batch: 50	00-62708	Date Ar	nalyzed	04/29/2009	1653			
Alkalinity		320		mg/L	1.1		5.0	1.0	310.1
	Anly Batch: 50	00-62347	Date Ar	nalyzed	04/24/2009	1009			

Client Sample ID: TS40015

Lab Sample ID:

500-18371-17

Client Matrix: Water

Date Sampled: 04/16/2009

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Date Received: 04/21/2009

1010

Analyte		Result	Qua	Units	MDL		RL	Dil	Method
Sulfate		180		mg/L	1.1		4.0	20	300.0
	Anly Batch: 50	0-62708	Date A	Analyzed	04/29/2009	1707			
Chloride		43		mg/L	0.32		4.0	20	300.0
	Anly Batch: 50	0-62708	Date A	Analyzed	04/29/2009	1707			
Alkalinity		310		mg/L	1.1		5.0	1.0	310.1
	Anly Batch: 50	0-62347	Date A	Analyzed	04/24/2009	1017			

Client Sample ID: TS40016

Lab Sample ID: Client Matrix:

Analyte

Sulfate

Chloride

500-18371-18

Result

35

140

Anly Batch: 500-62708

Water

Date Sampled: 04/17/2009

1115

Date Received: 04/21/2009 1010

RL Dil Method 4.0 20 300.0 1722 4.0 300.0

Anly Batch: 500-62708 Date Analyzed 04/29/2009 1722 250 Alkalinity mg/L 1.1

Qual Units

mg/L

mg/L

Date Analyzed 04/29/2009

Anly Batch: 500-62347 Date Analyzed 04/24/2009 1039

MDL

1.1

0.32

5.0 1.0 310.1

TestAmerica Laboratories, Inc.

Job Number:

500-18371-1

General	Chemistry
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Client Sample ID: TS31001

Lab Sample ID: 500-18371-19

Client Matrix:

Water

Date Sampled: 04/17/2009 1115

Date Received: 04/21/2009 1010

Analyte	Result	Qual Units	MDL	RL	Dil	Method
Sulfate	34	B mg/L	1.1	4.0	20	300.0
	Anly Batch: 500-6283	Date Analyzed	04/30/2009	1048		
Chloride	43	mg/L	0.32	4.0	20	300.0
	Anly Batch: 500-6283	Date Analyzed	04/30/2009	1048		
Alkalinity	210	mg/L	1.1	5.0	1.0	310.1
·	Anly Batch: 500-6234	17 Date Analyzed	04/24/2009	1046		

Client Sample ID: TS31002

Lab Sample ID: 500-18371-20

Client Matrix:

Water

Date Sampled: 04/17/2009 0000

Date Received: 04/21/2009 1010

Analyte		Result	Qua	Units	MDL		RL	Dil	Method
Sulfate		34		mg/L	1.1		4.0	20	300.0
	Anly Batch: 5	500-62708	Date A	Analyzed	04/29/2009	1736			
Chloride		43		mg/L	0.32		4.0	20	300.0
	Anly Batch: 5	500-62708	Date A	Analyzed	04/29/2009	1736			
Alkalinity		210		mg/L	1.1		5.0	1.0	310.1
·	Anly Batch: 5	500-62347	Date A	Analyzed	04/24/2009	1053			

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CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

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Contact & Company Name:	Telephone:	Preservative E A	EEE	Keys Preservation Key: Container Information
ERIC HRITSUK	312,332,4937 x24	Filtered (🗸)		A. H.SO. 1. 40 ml Vial
Address:	Fax:	#of Containers 2 2	1 1 1	C. HNQ 3, 250 ml Plastic
B City MONROE ST Zip	312.332.4434 E-mail Address:	Container 2 1	3 9 3	D. NaOH 4. 500 ml Plastic E. None 5. Encore
1.001	ERIC HRITSUK ARCADIS US. COM		ER ANALYSIS & METH	G. Other: 8. 8 oz. Glass
Project Name/Location (City, State): PIAINWELL CW SAMPLING	Project #:	1 / / /	/ / 💥	H. Other. 9. Other, L. Pou
Sampler's Printed Name:	B0064539.0000.00500	/1./. 27/1		Matrix Key: SQ - Soil SE - Sediment NL - NAPL/C
Sampler's Printed Name: MICHAEL KOHASEN	22/1/2	1 2 2 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 \ N \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	SQ - Soil SE - Sediment NL - NAPL/C W - Water SL - Sludge SW - Sample
Sample ID	Collection Type (✓) Matrix Pate Time Comp: Grab	12 12 12 12 12 12 12 12 12 12 12 12 12 1		Matrix Key: SO - Soil SE - Sediment NL - NAPL/C W - Water SL - Sludge SW - Sample T - Tissue A - Air Other:
T531000	413 09 1425 V W	X X X	X X X	
7540000	4/13 09 1600 V W	X X X	$X \mid X \mid X$	SODIUM, POTASSIUM,
TS40001	7/13/09/16/10 V W	X X X	X X X	SODIUM, POTASSIUM, MAGNESIUM & CALCIUM.
TSHM02	714691055 W	XXX	$X \mid X \mid X$	
TS40003	414/09 - V W	XXX	XXX	
T540004	flylog 1200 V W	XXX	XXX	
T540005	44 9 1350 V W	$\times \times \times \times$	$X \mid X \mid X$	
T540006	4/14/09 1420 V W	XXX	X X X	
•				
		- (NEXT		
Special Instructions/Comments:			☐ Special QA/QC Instructions(✓):	
Laboratory Informat	lion and Receipt	Relinquished By	Received By	Relinquished By Laboratory Received By
TAL-BURLINGTON	Cooler Custody Seal (✓)	i Name:	Printed Name:	Printed Name: Printed Name: Part Ame:
Cooler packed with ice (</td <td>☐ Intact ☐ Not Intact Signal</td> <td></td> <td>Signature:</td> <td>Signature: Signature:</td>	☐ Intact ☐ Not Intact Signal		Signature:	Signature: Signature:
Specify Turnaround Requirements: STANDARD	Sample Receipt:	READIS	Firm/Courier:	Firm/Courier: Firm:
Shipping Tracking #:	Condition/Cooler Temp:	ime: 1730	Date/Time:	Date/Time: Date/Time: 4/15/09 1025



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ERIC HRITSUK	312 332 4937 x 24	#of Containers 2 2		B. HCL 2. 1 L Amber C. 1NO ₃ 3. 250 ml Plastic
30 W. Moisrae ST	317 330 4434	Container 0	3 9 3 3	D. NaOH 4, 500 ml Plastic
State Zip	312 332 4434 E-mail Address:		R ANALYSIS & METHOD	E None 5 Encore F. Other 6 2 oz Glass 7 4 oz Glass
"CHICAGO IL GOGOS	ERV. HRITSUK @ARCADIS-US. COM			G. Other: 8, 8 oz. Glass
Project Name/Location (City, State): PLANNELL GW SAMPLING	Project #:			H. Other: 9 Other 10.0ther: 10.0ther
PLAINWILL GW SAMPLING Sampler's Printed Name:	R0064539,000,00500	// / / 2/2/	W. 1. 27 (R)	Matrix Key: SO - Soil SE - Sediment NL - NAPL/Oil
Sampler's Printed Name: MICHAEL KOHAGE		12 4 12 4 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2	X A X X X X X X X X X X X X X X X X X X	W - Water SL - Sludge SW - Sample Wipe T - Tissue A - Air Other:
Sample ID	Collection Type (✓) Matrix	Pa box E	/ に /美学がらく/	REMARKS
	Date Time Comp Grab		/ ONE/	<i>1</i>
T540007	4/15/09 1030 V W	X X X	^ ^ ^	I OTAL METAS INCLUDE.
T540008	415 09 1040 V W	XXX	XXX	TOTAL METALS INCLUDE: SODIUM, POTASSIUM,
T540009	41509 1150 V W	X X X	XXX	MAGNESIUM & CALCIUM.
Tsilonia		XXX	XXX	
		 / 	XXX	
T540011	1/15/09 1335 V W			
TS40012	1/16/07 1050 V W	XXX	XXX	
T540013	416/9/1100 / W	$\lambda X X$	X X X	Ms/msD
T54014	H1499 1340 VW	XXX	XXX	
TS40015	4/16/07 - W	x x x	XXX	
1310013				
			3	
		NA		
Special Instructions/Comments:			☐Special QA/QC Instructions(✓):	
Laboratory Informat	ion and Receipt	Relinquished By	Received By	Relinquished By Laboratory Received By
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Cooler packed with ice (*)	☐ Intact ☐ Not Intact Signa	WICHARD KONSCEN	Signature: Signa	ature: Signatura:
				/Courier: Frim:
Specify Turnaround Requirements:	Sample Receipt:	01106	Firm/Courier: Firm	Counter.
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Contact & Company Name:	Telephone:	731	J Ha.	 マフ ぃ	ηЦ	Preservative	E	A	E	E	E	<u></u>		Preservation Key:	Keys Container Information Key: 1. 40 ml Vial
ERIC HRITSUK	Fax:	- 22	2 49.	<u> </u>	41	# of Containers	2	2	1	î	1	1		A. H,SO, B. HCL C. HNO,	2. 1 L Amber 3, 250 ml Plastic
	312	332	. 443	4		Container Information	2	1	3 RANAI	9	3	3		D. NaOH E. None F. Other:	4, 500 ml Plastic 5, Encore 6, 2 oz. Glass
1 1 HICAGO LL (303					5-US.G	m /	PAR	KAMETE	K ANAI	L1313 6	. /	/	/	G. Other:	7. 4 oz. Glass 8. 8 oz. Glass 9. Other: <u>I Po</u> ży
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MICHAEL KOHAGEN	1/1					100	2/1.3	S S S	1 10	1 TIN	到春日	ú/		W - Water SL	- Sludge SW - Sample Wipe
Sample ID	Colle Pate	ection Time	Type (✓) (Grab	Matrix	Tod	18 8	25	55	SCURE	7			REMARKS	All Culer.
T540016	4/17/09	1115	1		W	X	X	_X_	X	X	X			<u> </u>	
T531001	1	1115	1		[X	X	X	X	X	X		MS	MSD	
T531001 T531002	4	_	1		4	X	X	X	X	X	X				
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TAL-BURLINGTON	Cooler	Justody Se	er (*)		<u> (</u> Y	1CHAZL	. Kert	AGEN	Togeth						
Cooler packed with ice (✓)	□ Int	act	□ Not	Intact	Signal	ture:			Signature:	Phe	ku	Signature:		Signature	
Specify Turnaround Requirements:	Sample	Receipt:			Firmy	DAAO			Firm/Courier:			Firm/Courier:		Firm:	
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Kalamazoo River Superfund Site Former Plainwell Impoundment Groundwater Sampling

Data Review

PLAINWELL, MICHIGAN

PCB, Metals and Miscellaneous Analyses

SDG# KAL462

Analyses Performed By: TestAmerica Laboratories Burlington, Vermont

Report: # 10605R Review Level: Tier III

Project: B0064539.0000.00500

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #KAL462 for samples collected in association with the Plainwell site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

			Sample	Parent	ent		Analysis				
Sample ID	Lab ID	Matrix	Collection Date	Sample	voc	svoc	PCB	MET	MISC		
TS31003	799720	Ground Water	6/29/2009				Χ	Х	Х		
TS40017	799721	Ground Water	6/29/2009				Χ	Х	Х		
TS40018	799722	Ground Water	6/29/2009				Χ	Х	Х		
TS40019	799723	Ground Water	6/29/2009				Х	Х	Х		
TS40020	799724	Ground Water	6/30/2009				Х	Х	Х		
TS40021	799725	Ground Water	6/30/2009	TS40020			Χ	Х	Х		
TS40022	799726	Ground Water	6/30/2009				Χ	Х	Х		
TS40023	799727	Ground Water	6/30/2009				Χ	Х	Х		
TS40024	799728	Ground Water	6/30/2009				Χ	Х	Х		
TS40025	799729	Ground Water	6/30/2009				Χ	Х	Х		
TS40026	799840	Ground Water	7/1/2009				Χ	Х	Х		
TS40027	799841	Ground Water	7/1/2009				Χ	Х	Х		
TS40028	799842	Ground Water	7/1/2009				Χ	Х	Х		
TS40029	799843	Ground Water	7/1/2009				Χ	Х	Х		
TS40030	799844	Ground Water	7/1/2009				Χ	Х	Х		
TS40031	799845	Ground Water	7/1/2009	TS40030			Χ	Х	Х		
TS40032	799846	Ground Water	7/1/2009				Х	Х	Х		
TS40033	799924	Ground Water	7/2/2009				Х	Х	Х		
TS31004	799925	Ground Water	7/2/2009				Χ	Х	Х		
TS31005	799926	Ground Water	7/2/2009	TS31004		_	Х	Х	Х		

Note:

- 1. Miscellaneous parameters include total organic carbon (TOC), total suspended solids (TSS), total dissolved solids (TDS), chloride, sulfate, and alkalinity.
- Matrix spike/matrix spike duplicate/laboratory duplicate was performed on sample locations TS40024 and TS31004.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

		Rep	orted		mance ptable	Not
	Items Reviewed	No	Yes	No	Yes	Required
1.	Sample receipt condition		Х		Х	
2.	Requested analyses and sample results		Х		Х	
3.	Master tracking list		Х		Х	
4.	Methods of analysis		Х		Х	
5.	Reporting limits		Х		Х	
6.	Sample collection date		Х		Х	
7.	Laboratory sample received date		Х		Х	
8.	Sample preservation verification (as applicable)		Х		Х	
9.	Sample preparation/extraction/analysis dates		Х		Х	
10.	Fully executed Chain-of-Custody (COC) form		Х		Х	
11.	Narrative summary of QA or sample problems provided		Х		Х	
12.	Data Package Completeness and Compliance		Х		Х	_

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to (United Stated Environmental Protection Agency) USEPA Method 8082. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 and USEPA Region II (SOP HW-45, Revision 1).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

The data presented in this package has been derived using a procedure developed by TestAmerica as an attempt to improve the analytical process of calibration, identification and quantitation of PCBs as Aroclors. Key components of this procedure include:

Calibration

The response function of the electron capture detector is inherently non-linear. While significant linearization is achieved for this detector by electronic means, some non-linearity remains. Power function linearization is used to straighten the curve and allow the use of response factors for calibration purposes.

During the initial calibration, a response factor is calculated for each peak in the individual Aroclors. A weighted response factor calculation has been used to adjust for non-linearity at the low end of the calibration curve.

Identification

Peak retention times are relative. Retention times are in set windows relative to the time markers DCB and TCX. Time markers adjust for minor variations in column flow or instrument condition and allow the use of very tight windows which minimizes the number of false positive and false negative peak identifications.

The determination of which Aroclor or mixture of Aroclors will produce a chromatogram most similar to that of the residue is made by expressing the unknown sample chromatogram as a linear combination of the Aroclors. The most similar Aroclor or mixture of Aroclors is determined by using a least squares minimization of the difference between the unknown chromatogram and the linear combination of Aroclors. This is similar to the procedure presented by L.E. Silvon, P.M. Schumacher and A. Alford-Stevens for the determination of Aroclor composition from GC/MS level of chlorination results.

Identification/quantitation of Aroclors in samples is based on the combined response of two columns, typically RTX-5 and RTX-35. The pooling of response combines the unique qualities of both columns to derive a more defined Aroclor pattern which is less likely to be affected by interferents. Identification/quantitation data for the individual columns is provided in the package and can be used as a check on the combined column results.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4 °C
377-040 0002	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for all Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration criteria were within the control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires the surrogate compounds must exhibited recoveries within the method established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
TS40027	Tetrachloro-m-xylene	< LL but > 10%
TS40031	Decachlorobiphenyl	AC

Lower control limit (LL) Acceptable (AC)

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
> the upper control limit (OL)	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
< the lower control limit (EE) but > 10 %	Detect	J
< 10%	Non-detect	R
< 1076	Detect	٦
One surrogate exhibiting recovery outside the control limits	Non-detect	No Action
but > 10%	Detect	NO ACTION
Surrogates diluted below the calibration curve due to the	Non-detect	J^1
high concentration of a target compound.	Detect	J

A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the method established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the method established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the method established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TS40020/TS40021	All Aroclors	0.048 U	0.048 U	AC
TS40030/TS40031	All Aroclors	0.049 U	0.051 U	AC
TS31004/TS31005	Aroclor 1242	0.048 U	0.048 U	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

The determination of Aroclor presence is made by expressing the unknown sample chromatogram as a linear combination of the Aroclors. The most similar Aroclor or mixture of Aroclors is determined by using a least squares minimization of the difference between the unknown chromatogram and the linear combination of Aroclors.

All identified compounds met the specified criteria.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs; SW846 8082	Rep	Reported		rmance eptable	Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Field blanks		Х		Х	
Laboratory Control Sample (LCS) %R		Х		Х	
Laboratory Control Sample Duplicate(LCSD) %R					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate(MSD) %R		Х		Х	
MS/MSD Precision (RPD)		Х		Х	
Field Duplicate (RPD)		Х		Х	
Surrogate Spike Recoveries		Х	Х		
Dilution Factor		Х		Х	
Moisture Content		Х		Х	
Tier III Validation					
Initial calibration %RSDs		Х		Х	
Continuing calibration %Ds		Х		Х	
System performance and column resolution		Х		Х	
Compound identification and quantitation		1			1
A. Quantitation Reports		Х		Х	
B. RT of sample compounds within the established RT windows		Х		Х	
C. Pattern identification		Х		Х	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X PPD role		X nt difference	

[%]RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Methods 6010B, 9060, 300.0, 310.1 and SM2540. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010B	Water	180 days from collection to analysis	Cooled @ 4 °C; preserved to a pH of less than 2.
	Soil	180 days from collection to analysis	Cooled @ 4 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the instrument detection limit (IDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the IDL, with the exception of the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (J) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
TS40018	Potassium	Detected sample results <rl <bal<="" and="" td=""><td>"UB" at the RL</td></rl>	"UB" at the RL

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard

recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard analysis are presented below in the CRDL standards evaluation table.

All CRDL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS analysis performed on sample locations TS40024 and TS31004 exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TS40020/TS40021	Calcium	93800	96000	2.3%
	Magnesium	21400	22100	3.2%
	Sodium	52700	54300	2.9%
	Potsassium	1650 B	1830 B	AC
	Calcium	123000	124000	0.8%
TS40030/TS40031	Magnesium	25400	25700	1.1%
1340030/1340031	Sodium	56300	56600	2.9%
	Potsassium	1930 B	2170 B	AC
	Calcium	84800	83900	1.0%
TS31004/TS31005	Magnesium	23000	22800	0.8%
	Sodium	27500	27200	1.0 %
	Potsassium	2680 B	2620 B	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution performed on sample locations TS40024 and TS31004 exhibited %D within the control limit.

8. Furnace Analysis QC

No furnace analyses were performed on the samples.

9. Method of Standard Additions (MSA)

No samples were analyzed following the method of standard additions.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6000/7000	Rep	orted		rmance ptable	Not
·	No	Yes	No	Yes	Required
Inductively Coupled Plasma-Atomic Emission Spe	ectrometry	(ICP)			
Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		Х		Х	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		Х		Х	
B. Method Blanks		Х		Х	
C. Equipment/Field Blanks		Х		X	
Laboratory Control Sample (LCS)		Х		X	
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate (MSD) %R		Х		Х	
MS/MSD Precision (RPD)		Х		X	
Field/Lab Duplicate (RPD)		Х		X	
ICP Serial Dilution		Х		Х	
Reporting Limit Verification		Х		Х	
Raw Data		Х		X	
Tier III Validation					
Initial Calibration Verification		Х		Х	
Continuing Calibration Verification		Х		Х	
CRDL Standard		Х		Х	
ICP Interference Check		Х		Х	
Transcription/calculation errors present		Х		Х	
Reporting limits adjusted to reflect sample dilutions		Х		Х	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Total Organic Carbon by EPA 9060	Water	28 days from collection to analysis	Cooled @ 4 °C; preserved to a pH of less than 2.
Total Dissolved Solids By EPA 160.1	Water	7 days from collection to analysis	Cooled @ 4 °C.
Total Suspended Solids By EPA 160.2	Water	7 days from collection to analysis	Cooled @ 4 °C.
Chloride by EPA 300.0	Water	28 days from collection to analysis	Cooled @ 4 °C.
Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cooled @ 4 °C.
Alkalinity by EPA 310.1	Water	14 days from collection to analysis	Cooled @ 4 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL. No qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS analysis performed on sample locations TS40024 and TS31004 exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited a RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	TOC	2.0	2.2	9.5%
	TDS	503	516	2.5%
TS40020/TS40021	TSS	11.7	11.8	0.8%
	Chloride	91	92	1.0%
	Sulfate	38	39	2.5%
	Alkalinity	260	260	0%
TC 40000/TC 40004	TOC	5.1	5	1.9%
TS40030/TS40031	TDS	615	613	0.3%
	TSS	19.3	19.5	1.0%

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Chloride	110	100	9.5%
	Sulfate	94	96	2.1%
	Alkalinity	300	300	0%
	TOC	6.2	6.3	1.5%
	TDS	407	395	2.9%
TS31004/TS31005	TSS	14.1	13.9	1.4%
	Chloride	51	51	0%
	Sulfate	29	28	3.5%
	Alkalinity	240	250	4.0%

AC Acceptable U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: Various Methods	Rep	orted		mance ptable	Not
	No	Yes	No	Yes	Required
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks			•		
A. Method blanks		Х		Х	
B. Field blanks		Х		Х	
Laboratory Control Sample (LCS) %R		Х		Х	
Laboratory Control Sample Duplicate(LCSD) %R					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate(MSD) %R					Х
MS/MSD Precision (RPD)					Х
Lab/Field Duplicate (RPD)		Х		Х	
Dilution Factor		Х		Х	
Moisture Content		Х		Х	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		Х		Х	
Continuing calibration %R		Х		Х	
Raw Data		Х		Х	
Transcription/calculation errors present				Х	
Reporting limits adjusted to reflect sample dilutions		X		X	

[%]RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference,

[%]D – difference

VALIDATION PERFORMED

BY: Jeffrey L. Davin

SIGNATURE:

DATE: August 10, 2009

PEER REVIEW: Dennis Capria

DATE: August 25, 2009

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

FORM 1 AROCLOR ANALYSIS DATA SHEET

EPA SAMPLE NO.

				TS	331003
Lab Name: _	TestAmerica Burling	ton	Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG:	KAL462
D	WATER			700720	
Phase Type:	WAICK	_	Lab Sample ID:	799720	
Phase Weight:	1060.	_ (mL)	Date Received:	07/01/09	····
Injection Volume:	1.0	(uL)	Date Extracted:	07/06/09	
Dilution Factor:	1.0	_	Date Analyzed:	07/09/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Arocior-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

FORM 1 AROCLOR ANALYSIS DATA SHEET

EPA SAMPLE NO.

					-	TS40017	,
Lab Name: _	TestAmerica Burling	ton	Lab Code:	STLV			
Contract:	27000	· ·	Case:	KZOO	SDG:	KAL462	
Phase Type:	WATER	_	Lab	Sample ID:	799721		
Phase Weight:	1005.	(mL)	Date	Received:	07/01/09		
Injection Volume:	1.0	_ (uL)	Date	Extracted:	07/06/09		
Dilution Factor:	1.0	_	Date	Analyzed:	07/09/09		
% Solids:			Sulfu	r Clean-un:	N		(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.050	U
11104-28-2	Aroclor-1221	0.050	U
11141-16-5	Aroclor-1232	0.050	U
53469-21-9	Aroclor-1242	0.050	U
12672-29-6	Aroclor-1248	0.050	U
11097-69-1	Arocior-1254	0.050	U
11096-82-5	Aroclor-1260	0.050	U

FORM 1 AROCLOR ANALYSIS DATA SHEET

EPA SAMPLE NO.

(Y/N)

TS40018 Lab Name: ___TestAmerica Burlington STLV Lab Code: __ Contract: 27000 KAL462 KZOO SDG: Case: Phase Type: WATER Lab Sample ID: 799722 1000. (mL) 07/01/09 Phase Weight: Date Received: 1.0 (uL) 07/06/09 Injection Volume: Date Extracted: 1.0 07/09/09 Dilution Factor: Date Analyzed:

% Solids:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.050	U
11104-28-2	Aroclor-1221	0.050	U
11141-16-5	Aroclor-1232	0.050	U
53469-21-9	Aroclor-1242	0.050	U
12672-29-6	Aroclor-1248	0.050	U
11097-69-1	Aroclor-1254	0.050	U
11096-82-5	Aroclor-1260	0.050	U

Sulfur Clean-up:

EPA SAMPLE NO.

07/09/09

(Y/N)

					,	TS40019	
Lab Name: _	TestAmerica Burlingt	on	Lab Code:	STLV			
Contract:	27000		Case:	KZOO	SDG:	KAL462	_
Phase Type:	WATER		La	nb Sample ID:	799723		
Phase Weight:	1020.	(mL)	D	ate Received: _	07/01/09		
Injection Volume:	1.0	(uL)	Da	ate Extracted:	07/06/09		

Dilution Factor: 1.0

% Solids: _____

Date Analyzed:

Sulfur Clean-up:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	υ
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

EPA SAMPLE NO.

Sulfur Clean-up: N (Y/N)

				TS	540020
Lab Name: _	TestAmerica Bur	lington	Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG:	KAL462
Phase Type:	WATER	****	Lab Sample ID:	799724	
Phase Weight:	1040.	(mL)	Date Received:	07/01/09	
Injection Volume:	1.0	(uL)	Date Extracted:	07/06/09	
Dilution Factor:	1.0		Date Analyzed:	07/09/09	

% Solids:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	υ
11096-82-5	Aroclor-1260	0.048	U

				Т	S40021
Lab Name: _	TestAmerica Bur	lington	Lab Code:STLV		
Contract:	27000		Case: KZOO	SDG:	KAL462
Phase Type:	WATER		Lab Sample ID:	799725	
Phase Weight:	1040.	(mL)	Date Received:	07/01/09	
Injection Volume:	1.0	(uL)	Date Extracted:	07/06/09	A STATE OF A STATE OF THE STATE
Dilution Factor:	1.0		Date Analyzed:	07/09/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION	QUALIFIER
		ug/L	
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

						TS40022	
Lab Name: _	TestAmerica Burli	ngton	Lab Code:	STLV			
Contract:	27000	ALCADA IN THE STATE OF THE STAT	Case: _	KZOO	SDG:	KAL462	
Phase Type:	WATER		La	b Sample ID:	799726	and the state of t	
Phase Weight:	1060.	(mL)	Da	te Received:	07/01/09		
Injection Volume:	1.0	(uL)	Da	te Extracted:	07/06/09)	
Dilution Factor:	1.0		Da	nte Analyzed:	07/09/09		
% Solide:			Sulf	fur Clean-un:	N		(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

					TS40023
Lab Name: _	TestAmerica Burl	ington	Lab Code:STLV		
Contract:	27000		Case: KZOO	SDG:	KAL462
Phase Type:	WATER		Lab Sample ID:	799727	
Phase Weight:	1030.	(mL)	Date Received: _	07/01/09	9
Injection Volume:	1.0	(uL)	Date Extracted: _	07/06/09	9
Dilution Factor:	1.0		Date Analyzed:	07/09/09	9
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Arocior-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

				-	TS40024
Lab Name: _	TestAmerica Burli	ngton	Lab Code: STLV		A 244 A 44 A 44 A 44 A 44 A 44 A 44 A 4
Contract:	27000		Case: KZOO	SDG:	KAL462
Phase Type:	WATER		Lab Sample ID:	799728	
Phase Weight:	1040.	(mL)	Date Received:	07/01/09	
Injection Volume:	1.0	(uL)	Date Extracted:	07/06/09	
Dilution Factor:	1.0		Date Analyzed:	07/09/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION	QUALIFIER
12674-11-2	Aroclor-1016	ug/L 0.048	l u
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

					TS40025
Lab Name: _	TestAmerica Bur	lington	Lab Code:STLV		
Contract:	27000		Case: KZOO	SDG:	KAL462
Phase Type:	WATER		Lab Sample ID:	799729	
Phase Weight:	1020.	(mL)	Date Received:	07/01/09	9
Injection Volume:	1.0	(uL)	Date Extracted:	07/06/09	9
Dilution Factor:	1.0		Date Analyzed:	07/09/09	9
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroctor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

						1540026	
Lab Name: _	TestAmerica Bur	lington	Lab Code:	STLV			
Contract:	27000		Case:	KZOO	SDG:	KAL462	
Phase Type:	WATER		La	b Sample ID:	799840		
Phase Weight:	1000.	(mL)	Da	ate Received:	07/02/09)	
njection Volume:	1.0	(uL)	Da	te Extracted: _	07/06/09)	
Dilution Factor:	1.0		Da	ate Analyzed:	07/09/09)	
% Solids:			Sul	fur Clean-up: _	N	()	Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.050	U
11104-28-2	Aroclor-1221	0.050	U
11141-16-5	Aroclor-1232	0.050	U
53469-21-9	Aroclor-1242	0.050	U
12672-29-6	Aroclor-1248	0.050	U
11097-69-1	Aroclor-1254	0.050	Ú
11096-82-5	Aroclor-1260	0.050	υ

					т	S40027	
Lab Name: _	TestAmerica Burling	ton	Lab Code:	STLV			
Contract:	27000		Case:	KZOO	SDG:	KAL462	
Phase Type:	WATER	_	La	b Sample ID:	799841		
Phase Weight:	960.	(mL)	Da	ite Received:	07/02/09		
Injection Volume:	1.0	_ (uL)	Da	te Extracted:	07/06/09		
Dilution Factor:	1.0	<u> </u>	Da	ate Analyzed:	07/09/09		
% Solids:		<u>-</u>	Sul	fur Clean-up:	N		(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.052	U
11104-28-2	Aroclor-1221	0.052	U
11141-16-5	Aroclor-1232	0.052	U
53469-21-9	Aroclor-1242	0.052	U
12672-29-6	Aroclor-1248	0.052	U
11097-69-1	Aroclor-1254	0.052	U
11096-82-5	Aroclor-1260	0.052	U

						TS40028	
Lab Name: _	TestAmerica Burlir	igton	Lab Code: _	STLV			
Contract:	27000		Case:	KZOO	SDG:	KAL462	
Phase Type:	WATER		Lat	o Sample ID:	799842		
Phase Weight:	1050.	(mL)	Da	te Received:	07/02/09)	
Injection Volume:	1.0	(uL)	Dat	te Extracted:	07/06/09)	
Dilution Factor:	1.0		Da	te Analyzed:	07/09/09)	
% Solids:			Sulf	ur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

					Т	r\$40029	
Lab Name:	TestAmerica Burling	ton	Lab Code:	STLV			
Contract: _	27000	_	Case: _	KZOO	SDG:	KAL462	
Phase Type:	WATER	_	La	b Sample ID:	799843		
Phase Weight:	960.	(mL)	Da	ite Received:	07/02/09		
Injection Volume:	1.0	(uL)	Da	te Extracted:	07/06/09		
Dilution Factor:	1.0	_	Da	ate Analyzed:	07/09/09		
% Solids:			Sul	fur Clean-up:	N		(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.052	U
11104-28-2	Aroclor-1221	0.052	U
11141-16-5	Aroclor-1232	0.052	U
53469-21-9	Aroclor-1242	0.052	U
12672-29-6	Aroclor-1248	0.052	U
11097-69-1	Aroclor-1254	0.052	U
11096-82-5	Aroclor-1260	0.052	U

					-	ΓS40030
Lab Name: _	TestAmerica Burlingt	on	Lab Code:	STLV		
Contract:	27000	_	Case:	KZOO	SDG:	KAL462
Phase Type:	WATER	_	La	b Sample ID:	799844	and Marine, and play the state of the state
Phase Weight:	1020.	_ (mL)	Da	te Received:	07/02/09	
Injection Volume:	1.0	_ (uL)	Da	te Extracted:	07/06/09	
Dilution Factor:	1.0	-	Da	ate Analyzed:	07/09/09	
% Solids:			Sul	fur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION	QUALIFIER
		ug/L	
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

						TS40031	
Lab Name: _	TestAmerica Burlin	ngton	Lab Code:	STLV			
Contract:	27000		Case: _	KZ00	SDG:	KAL462	
Phase Type:	WATER		La	b Sample ID:	799845		
Phase Weight:	980.	(mL)	Da	nte Received:	07/02/09)	
Injection Volume:	1.0	(uL)	Da	te Extracted:	07/06/09		
Dilution Factor:	1.0		Da	ate Analyzed:	07/09/09)	
% Solids:			Sul	fur Clean-up:	N		(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER	
12674-11-2	Aroclor-1016	0.051	U	
11104-28-2	Aroclor-1221	0.051	U	
11141-16-5	Aroclor-1232	0.051	U	
53469-21-9	Aroclor-1242	0.051	U	
12672-29-6	Aroclor-1248	0.051	U	
11097-69-1	Aroclor-1254	0.051	U	
11096-82-5	Aroclor-1260	0.051	U	

EPA SAMPLE NO.

07/06/09

			TS40032	
 Lab Code:	STLV			
Case: _	KZOO	sDG: _	KAL462	
Lab Sample ID:		799846		
Da	ate Received:	07/02/09	9	

Date Extracted:

 Dilution Factor:
 1.0
 Date Analyzed:
 07/09/09

 % Solids:
 Sulfur Clean-up:
 N
 (Y/N)

Lab Name: ___TestAmerica Burlington

WATER

1040.

(mL)

(uL)

Contract: 27000

Phase Type:

Phase Weight:

Injection Volume: 1.0

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

					٦	TS40033
Lab Name:	TestAmerica Burling	gton	Lab Code: _	STLV		
Contract:	27000		Case:	KZ00	SDG:	KAL462
Phase Type:	WATER		Lal	b Sample ID:	799924	
Phase Weight:	1020.	(mL)	Date Received:		07/03/09	
Injection Volume:	1.0	(uL)	Date Extracted:		07/06/09	
Dilution Factor:	1.0		Da	ate Analyzed:	07/09/09	
9/ Solide:			Sul	fur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Arocior-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

				٦	TS31004
Lab Name: _	TestAmerica Burli	ngton	Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG:	KAL462
Phase Type:	WATER		Lab Sample ID:	799925	
Phase Weight:	1040.	(mL)	Date Received:	07/03/09	
Injection Volume:	1.0	(uL)	Date Extracted:	07/06/09	
Dilution Factor:	1.0	-	Date Analyzed:	07/09/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	υ

					ר	ΓS31005	
Lab Name: _	TestAmerica Burlin	gton	_ Lab Code:	STLV			
Contract:	27000		Case:	KZOO	SDG:	KAL462	
Phase Type:	WATER		L.a	b Sample ID:	799926		
Phase Weight:	1040.	(mL)	Da	ate Received:	07/03/09		
Injection Volume:	1.0	(uL)	Date Extracted:		07/06/09		
Dilution Factor:	1.0	·	Da	ate Analyzed:	07/09/09		
% Solids:			Sul	fur Clean-up:	N	· ((Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

						-		TS31003
Lab Name:	TestAmer	rica Burlingtor	Contr	act: 29000		L_		
Lab Code:	STLV	Case No.:	KZOO SI	AS No.:		SDG No	o.:	KAL462
Matrix (soi	il/water):	WATER		Lab Sample ID:		79972	0	
Level (low/	/med):	LOW		Date Received:		07/01	/09	
% Solids:	0.0							
		Concentration (Jnits (ug/L or m	g/kg dry weight):		UG/L	ı	_
		CAS No.	Analyte	Concentration	С	Q	м	
		7440-70-2	Calcium	79700	<u> </u>		P	
		7439-95-4	Magnesium	21000	Ī		P	

23300

2720 |B |N

P

P

Sodium

Potassium

7440-23-5

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:		letinos			

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INORGANIC ANALYSES DATA SHEET

							TS31004
Lab Name:	TestAmer	ica Burlington		Contract:	29000	<u> </u>	
Lab Code:	STLV	Case No.:	KZOO	SAS No.:		SDG No.:	KAL462
Matrix (soil	l/water):	WATER		Lab	Sample ID:	799925	н
Level (low/m	med):	LOW		Dat	ce Received:	07/03/09	
% Solids:	0.0	-					
		Concentration Un	nits (ug/1	L or mg/kg di	ry weight):	UG/L	
			31-	-t-			7

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	84800			P
7439-95-4	Magnesium	23000			P
7440-23-5	Sodium	27500			P
7440-09-7	Potassium	2680	В	M	P

Color Before:	colorless	Clarity Before:	clear	Texture:	NO.
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:		**************************************			
_					
		·**			

INORGANIC ANALYSES DATA SHEET

T831005								E	PA SAMPLE NO.
Lab Code: STLV Case No.: KZOO SAS No.: SDG No.: KAL462 Matrix (soil/water): WATER Lab Sample ID: 799926 Level (low/med): LOW Date Received: 07/03/09 % Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 83900 P 7439-95-4 Magnesium 22800 P 7440-23-5 Sodium 27200 P									TS31005
Matrix (soil/water): WATER Lab Sample ID: 799926 Level (low/med): LOW Date Received: 07/03/09 * Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 83900 P 7439-95-4 Magnesium 22800 P 7440-23-5 Sodium 27200 P	Lab Name:	TestAmer	rica Burlington	Contra	ct: 29000		L_		
Level (low/med): LOW Date Received: 07/03/09 % Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 83900 P 7439-95-4 Magnesium 22800 P 7440-23-5 Sodium 27200 P	Lab Code:	STLV	Case No.:	KZOO SAS	5 No.:		SDG No	o.:	KAL462
% Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L UG/L	Matrix (soi	il/water):	WATER		Lab Sample ID:		79992	6	
CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 83900 P 7439-95-4 Magnesium 22800 P 7440-23-5 Sodium 27200 P	Level (low/	/med):	LOW		Date Received:		07/03	/09	
CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 83900 P 7439-95-4 Magnesium 22800 P 7440-23-5 Sodium 27200 P	% Solids:	0.0	_						
7440-70-2 Calcium 83900 P 7439-95-4 Magnesium 22800 P 7440-23-5 Sodium 27200 P			Concentration U	nits (ug/L or mg	/kg dry weight):		UG/L	1	
7439-95-4 Magnesium 22800 P P 7440-23-5 Sodium 27200 P			CAS No.	Analyte	Concentration	С	Q	м	
7440-23-5 Sodium 27200 P			7440-70-2	Calcium	83900			P	
			7439-95-4	Magnesium	22800	Ī	Ī	P	
7440-09-7 Potassium 2620 B M P			7440-23-5	Sodium	27200	Π	Ī .	P	
			7440-09-7	Potassium	2620	В	M	P	
			7440-09-7	Potassium	2620	В]M	P	

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:			***************************************		(Physical Agency
****	****				

INORGANIC ANALYSES DATA SHEET

						rs40017
b Name:	TestAme	rica Burlingto	n Contra	at: <u>29000</u>	<u> </u>	
b Code:	STLV	Case No.:	KZOO SAS	S No.:	_ SDG No.: KA	L462
trix (soi	1/water):	WATER		Lab Sample ID:	799721	
vel (low/	med):	LOW		Date Received:	07/01/09	
Solids:	0.0					
DOTTUS.	<u> </u>					
		Concentration	Units (ug/L or mg	<pre>//kg dry weight):</pre>	UG/L	
		CAS No.	Analyte	Concentration	C Q M	
		7440-70-2	Calcium	190000	P	
		7439-95-4	Magnesium	33700	P	
		7440-23-5	Sodium	14300	P	
		7440-09-7	Potassium	7490	M P	
Color Be	fore: C	olorless	Clarity Before:	clear	Texture:	
Color Be		· · · · · · · · · · · · · · · · · · ·	Clarity Before: Clarity After:	clear	Texture:	
	ter: <u>c</u>	· · · · · · · · · · · · · · · · · · ·				

INORGANIC ANALYSES DATA SHEET

						L		
Lab Name:		rica Burlingto						
Lab Code:	STLV	_ Case No.:	KZOO SA	AS No.:		SDG No	.: <u>KAL46</u>	2
Matrix (soi	l/water):	WATER		Lab Sample ID:		799722	2	*****
Level (low/	med):	LOW Date Received:				07/01/	/09	
% Solids:	0.0							
			Thite (n=/T	-/lea dans		TTC /T		
		Concentration	onits (ug/L or m	g/kg dry weight):		UG/L		
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	95300			P	
		7439-95-4	Magnesium	19000			P	
		7440-23-5	Sodium	27700			P	
		7440-09-7	Potassium	5000 -1160*	B	N UB	P	
Color Bei	fore: co	lorless	Clarity Before:	clear	Te	xture:		\$ V
Color Aft	cer: co	lorless	Clarity After:	clear	. Ar	tifact	s:	
Comments	·							
				· · · · · · · · · · · · · · · · · · ·				

INORGANIC ANALYSES DATA SHEET

TS40019	

								TS40019
Lab Name:	TestAmer	ica Burlington	Contrac	et: <u>29000</u>				
Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL462
Matrix (soi	1/water):	WATER	Lab Sample ID: 7997				3	
Level (low/	med):	LOW		Date Received:		07/01/	/09	
% Solids:	0.0	_						
		Concentration Ur	nits (ug/L or mg/	/kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	116000			P	
		7439-95-4	Magnesium	27800		1	P	
		7440-23-5	Sodium	56000			P	
		7440-09-7	Potassium	2360	В	M	P	
					,	,		

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	***************************************
Comments:					
-					
_					

INORGANIC ANALYSES DATA SHEET

								TS4002
Lab Name:	TestAmer	cica Burlington	Contra	act: 29000				
Lab Code:	STLV	Case No.:	KZOO SA	AS No.:		SDG No	·.:	KAL462
Matrix (soi	l/water):	WATER		Lab Sample ID:		79972	4	
Level (low/	med):	LOW		Date Received:		07/01	/09	
% Solids:	0.0							
		- Concentration U	nits (ug/L or m	g/kg dry weight):		UG/L		
		CAS No.	Analyte	Concentration	С	Q	М]
		7440-70-2	Calcium	93800	 		P	_1 _
		7439-95-4	Magnesium	21400	i -		P	Ī
		7440-23-5	Sodium	52700	Ī	I ,	P	_
				1650	B	Jan		

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					

INORGANIC ANALYSES DATA SHEET

								TS40021
		n n n	_ ~ .	20000				1040071
ab Name:		rica Burlingto						KAL462
ab Code:	STLV	Case No.:	KZOO SA	S No.:		EDG No		NALI4 02
trix (soi	l/water):	WATER		Lab Sample ID:	2	79972	5	
vel (low/	med):	LOW		Date Received:		07/01,	/09	
Solids:	0.0							
				. /1		TIC /T		
		Concentration	Units (ug/L or mo	g/kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	96000			P	Ì
		7439-95-4	Magnesium	22100			P]
		7440-23-5	Sodium	54300		/	P	_
		7440-09-7	Potassium	1830	B	Ń	P	
Color Be	efore: C	olorless	Clarity Before:	clear	Te	xture	:	
Color Be	efore: C	olorless	Clarity Before:	clear	Te	xture	:	
Color Be			Clarity Before: Clarity After:	clear	•	xture		
	fter: C		_		•			

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

P

P

 	 -
10022	

								1540022
Lab Name:	TestAmer	rica Burlington	n Conti	eact: 29000				
Lab Code:	STLV	Case No.:	KZOO S	AS No.:		SDG No	·.:	KAL462
Matrix (so	il/water):	WATER		Lab Sample ID:		79972	6	
Level (low,	/med):	LOW		Date Received:		07/01	/09	
% Solids:	0.0	_						
		Concentration 1	Jnits (ug/L or m	ng/kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	99600			P	<u>'</u>
		7439-95-4	Magnesium	25700			P	1

46300

2220 B

M

Sodium

Potassium

7440-23-5

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
				MARANA AND AND AND AND AND AND AND AND AND	

INORGANIC ANALYSES DATA SHEET

							E	EPA SAMPLE NO.
								TS40023
Lab Name:	TestAmer	ica Burlington	Contrac	st: <u>29000</u>				
Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	. :	KAL462
Matrix (soi	1/water):	WATER	and the state of t	Lab Sample ID:		799727	7	
Level (low/	med):	LOW		Date Received:		07/01/	/09	
% Solids:	0.0	-						
		Concentration Ur	nits (ug/L or mg/	/kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	193000			P	<u>.</u>
		7439-95-4	Magnesium	27000	Ì	Ì	P	<u>.</u>
		7440-23-5	Sodium	48500	l		P	
		7440-09-7	Potassium	1620	В]M	P	Ī
								-

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:	W. C. C. C. C. C. C. C. C. C. C. C. C. C.				

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

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	_		TS.	40	024	ı		•
			10		U Z "			

						- 1		TS40024
Lab Name:	TestAmer	ica Burlington	n Cont	ract: <u>29000</u>		!		
Lab Code:	STLV	Case No.:	KZOO S	AS No.:		SDG No	·.:	KAL462
Matrix (soil	/water):	WATER		Lab Sample ID:		79972	8	
Level (low/m	ied) :	LOW		Date Received:		07/01	/09	
% Solids:	0.0	_						
		Concentration	Units (ug/L or	mg/kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	168000	1		P	j
		7439-95-4	Magnesium	35400		1	P	1

51000

3140 B N

Sodium

Potassium

7440-23-5

7440-09-7

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

Contract:

TestAmerica Burlington

Lab Name:

29000

Lab Code: ST	'LV	Case No.	: <u>KZOO</u>	SAS No.:		SDG No	.:	KAL462	
Matrix (soil/w	ater):	WATER		Lab Sample ID:		799729	9		
Level (low/med		LOW		Date Received:		07/01,			
% Solids: 0 .	. 0	-							
		Concentration	Units (ug/L or	r mg/kg dry weight):		UG/L			
		CAS No.	Analyte	Concentration	С	Q	М		
		7440-70-2	Calcium	127000			P		
		7439-95-4	Magnesium	29600			P		
		7440-23-5	Sodium	74000	<u> </u>	<u> </u>	P	<u> </u>	
		7440-09-7	Potassium	2560	В	M	P		
Color Befor	e: co	lorless	Clarity Before	e: clear	- 1	'exture	:		
Color After	:: <u>co</u>	lorless	Clarity After:	: clear	- 7	Artifac	ts:		
Comments:									•
2									

INORGANIC ANALYSES DATA SHEET

						TS40026
Lab Name:	TestAme	rica Burlingto	n Conti	ract: 29000		
Lab Code:	STLV	Case No.:	KZOO s	AS No.:	SDG No.:	KAL462
Matrix (soi	.1/water):	WATER		Lab Sample ID:	799840	
Level (low/	med):	LOW		Date Received:	07/02/09	
% Solids:	0.0					
			77m à 10 m - 1 17	mar/lear along the little	UG/L	
		Concentration	Units (ug/L or i	mg/kg dry weight):	06/11	
		CAS No.	Analyte	Concentration	C Q M	
		7440-70-2	Calcium	115000	P	[
		7439-95-4	Magnesium	28900	P	1
		7440-23-5	Sodium	88800	P	<u> </u>
		7440-09-7	Potassium	2290	B M B	
Color Be			Clarity Before:	clear	Texture:	
Color Af	fter: C	olorless	Clarity After:	clear	Artifacts:	
Comments	s:					

INORGANIC ANALYSES DATA SHEET

								TS40027
Lab Name:	TestAmer	ica Burlingto	n Contra	act: 29000				
Lab Code:	STLV	Case No.:	KZOO SA	S No.:		SDG No	·.:	KAL462
Matrix (soil	/water):	WATER		Lab Sample ID:		79984	1	
Level (low/m		LOW		Date Received:		07/02	/09	
% Solids:	0.0							
		- Concentration	Units (ug/L or mo	g/kg dry weight):		UG/L	i	-
		CAS No.	Analyte	Concentration	С	Q	м	
		7440-70-2	Calcium	122000			P	
		7439-95-4	Magnesium	29900			P	
		7440-23-5	Sodium	63500			P	
		7440-09-7	Potassium	2090	В	N	P	
Color Bef	ore: CO	lorless	Clarity Before:	clear	T	exture	:	
Color Bef	ore: co	TOLIESS	CIATITY BEFORE:	Clear	- T	exture	:	
Color Aft	er: co	lorless	Clarity After:	clear	. A	rtifac	ts:	
Comments:								

INORGANIC ANALYSES DATA SHEET

TS40028	

Lab Name: TestAmer Lab Code: STLV	ica Burlington	Contra	ct: 29000		ــــا		
Lab Code: STLV							
	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL462
Matrix (soil/water):	WATER		Lab Sample ID:		799842	2	
Level (low/med):	LOW		Date Received:		07/02/	/09	
% Solids: 0.0							
	Concentration Ur	nits (ug/L or mg	/kg dry weight):		UG/L	·	·····
	CAS No.	Analyte	Concentration	С	Q	м	
	7440-70-2	Calcium	141000	1		P	1
	7439-95-4	Magnesium	26500			P]
	7440-23-5	Sodium	59900	1	1 /	P]
	7440-09-7	Potassium	2170	В	M	P	_
							-

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	-
Comments:					P144
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INORGANIC ANALYSES DATA SHEET

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TS40	029		

								TS40029
Lab Name:	TestAmer	cica Burlington	Contrac	et: <u>29000</u>				***************************************
Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	o.:	KAL462
Matrix (soi	.l/water):	WATER		Lab Sample ID:		79984	3	
Level (low/	med):	LOW		Date Received:		07/02	/09	
% Solids:	0.0							
		Concentration Un	nits (ug/L or mg,	/kg dry weight):		UG/L	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	_
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	160000		İ	P	
		7439-95-4	Magnesium	29200			P	
		7440-23-5	Sodium	58400		<u> </u>	P	İ
		7440-09-7	Potassium	2090	В	M	P	

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

							TS40030
Lab Name:	TestAmerica	a Burlington	·	Contract:	29000	<u> </u>	
Lab Code:	STLV	Case No.:	KZOO	SAS No.:		SDG No.:	KAL462
Matrix (soi	l/water):	WATER		Lab	Sample ID:	799844	
Level (low/	med): LO	W		Dat	e Received:	07/02/09	

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	123000	 	<u> </u>	P
7439-95-4	Magnesium	25400	İ		P
7440-23-5	Sodium	56300	İ	,	P
7440-09-7	Potassium	1930	В	M	P

Color Before:	colorless	Clarity Before:	clear	Texture:	Makes
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

TS40031	

Lab Name:	TestAmer	ica Burlington		Contract:	29000		
Lab Code:	STLV	Case No.:	KZOO	SAS No.:		SDG No.:	KAL462
Matrix (soi	1/water):	WATER		Lab	Sample ID:	799845	
Level (low/	med):	TOM		Dat	e Received:	07/02/09	
% Solids:	0.0	-					
		Concentration Un	its (ug/	'L or mg/kg dr	y weight):	UG/L	

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	124000	1		P
7439-95-4	Magnesium	25700	1	l	P
7440-23-5	Sodium	56600	Ī	1/	P
7440-09-7	Potassium	2170	В	M	P

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

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TS40	032		

		1540032
cica Burlington	Contract: 29000	
Case No.: KZOO	SAS No.:	SDG No.: KAL462
WATER	Lab Sample ID:	799846
LOW	Date Received:	07/02/09
_		
Concentration Units (ug/	/L or mg/kg dry weight):	UG/L
	Case No.: KZOO WATER LOW	Case No.: KZOO SAS No.: WATER Lab Sample ID:

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	129000			P
7439-95-4	Magnesium	34100		1	P
7440-23-5	Sodium	38600		Ĭ .	P
7440-09-7	Potassium	4120	В	W	P

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				
				

USEPA-CLP FORMS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

T	S400	33	

Lab Name:	TestAmer	rica Burlingto	n Contr	eact: 29000			-	*****
Lab Code:	STLV	_ Case No.:	KZOO s	AS No.:		SDG N	Io . :	KAL462
Matrix (soi	l/water):	WATER		Lab Sample ID:	:	7999	24	
Level (low/	med):	LOW		Date Received:	:	07/0	3/09	
	0.0							
% Solids:								
% Solids:		Concentration	Units (ug/L or m	ng/kg dry weight):	·	UG/	<u>L</u>	
% Solids:		Cas No.	Units (ug/L or r	ng/kg dry weight):	С	UG/	L M	
% Solids:		<u> </u>			С		7	
% Solids:		CAS No.	Analyte	Concentration	C		М	
% Solids:		CAS No.	Analyte Calcium	Concentration 90000	C		M P	

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

Sample Report Summary

Client Sample No.

TS31003

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799720

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/02/09	BLKDS070209A	mg/L	1	5.0	386	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	15.7	
5310	Organic Carbon, Total	07/02/09	BLKT0070209B	mg/L	1	1.0	7.1	

Sample Report Summary

Client Sample No.

TS40017

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799721

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	07/02/09	BLKDS070209A	mg/L	1	5,0	749	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	0.50	U
5310	Organic Carbon, Total	07/08/09	BLKT0070809A	mg/L	2	2.0	19.5	
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Sample Report Summary

Client Sample No.

TS40018

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799722

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/02/09	BLKDS070209A	mg/L	1	5.0	438	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	13.7	
5310	Organic Carbon, Total	07/02/09	BLKT0070209B	mg/L	1	1.0	3.2	
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					:			

Sample Report Summary

Client Sample No.

TS40019

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799723

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	07/02/09	BLKDS070209A	mg/L`	1	5.0	615	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	15.4	
5310	Organic Carbon, Total	07/02/09	BLKTO070209B	mg/L	1	1.0	3.4	
					i : :			

Sample Report Summary

Client Sample No.

TS40020

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799724

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/02/09	BLKDS070209A	mg/L	1	5.0	503	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	11.7	
5310	Organic Carbon, Total	07/02/09	BLKT0070209B	mg/L	1	1.0	2.0	
			·					

Sample Report Summary

Client Sample No.

TS40021

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799725

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/02/09	BLKD\$070209A	mg/L	1	5.0	516	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	11.8	
5310	Organic Carbon, Total	07/02/09	BLKT0070209B	mg/L	1	1.0	2.2	
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Sample Report Summary

Client Sample No.

TS40022

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799726

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/02/09	BLKD\$070209A	mg/L	1	5.0	506	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	9.5	
5310	Organic Carbon, Total	07/02/09	BLKT0070209B	mg/L	1	1.0	1.2	
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Sample Report Summary

Client Sample No.

TS40023

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799727

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	_RL	Conc.	Qual.
2540	Total Dissolved Solids	07/02/09	BLKDS070209A	mg/L	1	5.0	921	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	29.4	
5310	Organic Carbon, Total	07/02/09	BLKT0070209B	mg/L	1	1.0	12.3	
	,							

Sample Report Summary

Client Sample No. TS40024

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799728

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/02/09	BLKDS070209A	mg/L	1	5.0	833	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	13.1	
5310	Organic Carbon, Total	07/02/09	BLKTO070209B	mg/L	1	1.0	5.7	
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Sample Report Summary

Client Sample No.

TS40025

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799729

Matrix: WATER

Client: BBLKAL

Date Received: 07/01/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/02/09	BLKDS070209A	mg/L	1	5.0	708	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	16.7	
5310	Organic Carbon, Total	07/02/09	BLKT0070209B	mg/L	1	1.0	2.9	

Sample Report Summary

Client Sample No.
TS40026

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799840

Matrix: WATER

Client: BBLKAL

Date Received: 07/02/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	704	***************************************
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	9.5	
5310	Organic Carbon, Total	07/07/09	BLKTO070709A	mg/L	1	1.0	1.9	
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Sample Report Summary

Client Sample No.

TS40027

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799841

Matrix: WATER

Client: BBLKAL

Date Received: 07/02/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	712	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	13.1	
5310	Organic Carbon, Total	07/07/09	BLKT0070709A	mg/L	1	1.0	3.4	
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Sample Report Summary

Client Sample No. TS40028

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799842

Matrix: WATER

Client: BBLKAL

Date Received: 07/02/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/07/09	BLKD\$070709A	mg/L	1	5.0	671	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	11.8	
5310	Organic Carbon, Total	07/07/09	BLKTO070709A	mg/L	1	1.0	4.6	
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Sample Report Summary

Client Sample No.

TS40029

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799843

Matrix: WATER

Client: BBLKAL

Date Received: 07/02/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	765	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	23.0	
5310	Organic Carbon, Total	07/07/09	BLKT0070709A	mg/L	1	1.0	5.9	

Sample Report Summary

Client Sample No.

TS40030

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799844

Matrix: WATER

Client: BBLKAL

Date Received: 07/02/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	615	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	19.3	
5310	Organic Carbon, Total	07/07/09	BLKTO070709A	mg/L	1	1.0	5.1	
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Sample Report Summary

Client Sample No.

TS40031

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799845

Matrix: WATER

Client: BBLKAL

Date Received: 07/02/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	613	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	19.5	
5310	Organic Carbon, Total	07/07/09	BLKT0070709A	mg/L	1	1.0	5.0	
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Sample Report Summary

Client Sample No.

TS40032

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799846

Matrix: WATER

Client: BBLKAL

Date Received: 07/02/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	653	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	14.1	
5310	Organic Carbon, Total	07/07/09	BLKT0070709A	mg/L	1	1.0	7.1	
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Sample Report Summary

Client Sample No.

TS40033

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799924

Matrix: WATER

Client: BBLKAL

Date Received: 07/03/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	515	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	6.1	
5310	Organic Carbon, Total	07/07/09	BLKTO070709A	mg/L	1	1.0	1.5	
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Sample Report Summary

Client Sample No.
TS31004

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799925

Matrix: WATER

Client: BBLKAL

Date Received: 07/03/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	407	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	14.1	
5310	Organic Carbon, Total	07/07/09	BLKT0070709A	mg/L	1	1.0	6.2	
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Sample Report Summary

Client Sample No.

TS31005

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL462

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 799926

Matrix: WATER

Client: BBLKAL

Date Received: 07/03/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	07/07/09	BLKDS070709A	mg/L	1	5.0	395	
2540	Total Suspended Solids	07/06/09	BLKTS070609A	mg/L	0	0.50	13.9	
5310	Organic Carbon, Total	07/07/09	BLKT0070709A	mg/L	1	1.0	6.3	
				å 1 1 1				

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS31003 Lab Sample ID: 500-19848-1 Date Sampled: 06/29/2009 13 Date Received: 07/07/2009 10

1310 1030

Client Matrix: Water

Result/Qualifier Unit MDL RLDilution Analyte Date Analyzed: 07/08/2009 1351 Method: 300.0 B 44 0.46 2.0 10 Chloride mg/L 0.63 2.0 Sulfate 27 mg/L 10 Date Analyzed: 07/10/2009 1053 Method: 310.1 220 5.0 1.0 mg/L 1.1 Alkalinity

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40017 Lab Sample ID: 500-19848-2 Date Sampled: 06/29/2009 1400 Date Received:07/07/2009 1030

Analyte	Result/Qualifie	er Uni	t MDI	_ RL	Dilution
Method: 300.0 Chloride	21 ,	4	Date Analyzed: _ 0.46		1405 10
Method: 300.0 Sulfate	100 /8	and the same of th	Date Analyzed: 1.3	07/09/2009 4.0	1525 20
Method: 310.1 Alkalinity	460	t mg/	Date Analyzed: 1.1	07/10/2009 5.0	1101 1.0

Job Number: 500-19848-1

Sdg Number: KAL462

Client Sample ID:TS40018 Lab Sample ID: 500-19848-3 Date Sampled: 06/29/2009 1455 Date Received:07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride Sulfate	37 B 87 B	Date mg/L mg/L	Analyzed: 0.46 0.63	07/08/2009 1419 2.0 2.0	10 10
Method: 310.1 Alkalinity	230	Date mg/L	Analyzed: 1.1	07/10/2009 1109 5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40019 Lab Sample ID: 500-19848-4 Date Sampled: 06/29/2009 1535
Date Received: 07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0	20		Analyzed:		40
Sulfate	83 /B	mg/L	0.63	2.0	10
Method: 300.0		Date	Analyzed:	07/09/2009 1539	
Chloride	110	mg/L	0.92	4.0	20
Method: 310.1		Date	Analyzed:	07/10/2009 1116	
Alkalinity	290	mg/L	1.1	5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40020 Lab Sample ID: 500-19848-5 Date Sampled: 06/30/2009 1000 Date Received:07/07/2009 1030

Analyte		Result/Qualifi	er	Unit	MDL	RL		Dilution
Method: Sulfate	300.0	38	B -/	Date mg/L	Analyzed: 0.63	07/08/2009	1517	10
Method: Chloride	300.0	91		Date mg/L	Analyzed: 0.92	07/09/2009 4.0	1553	20
Method: Alkalinity	310.1	260		Date mg/L	Analyzed: 1.1	07/10/2009 5.0	1124	1.0

Job Number: 500-19848-1

Sdg Number: KAL462

Client Sample ID:TS40021 Lab Sample ID: 500-19848-6 Date Sampled: 06/30/2009

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Date Received:07/07/2009

1030

Analyte	Result/Qualifier	Unit	MDL	. RL	Dilution
Method: 300.0 Sulfate	39 B	Date mg/L	Analyzed: 0.63	07/08/2009 1531 2.0	10
Method: 300.0 Chloride	92	Date mg/L	Analyzed: 0.92	07/09/2009 1636 4.0	20
Method: 310.1 Alkalinity	260	Date mg/L	Analyzed: 1.1	07/10/2009 1131 5.0	1.0

Client Sample ID:TS40022

Lab Sample ID: 500-19848-7

Job Number: 500-19848-1 Sdg Number: KAL462

Date Sampled: 06/30/2009 1040

Date Received:07/07/2009

1030

Analyte		Result/Qualifier	Unit	MDL	RL		Dilution
Method: Sulfate	300.0	35 B	Date mg/L	Analyzed: 0.63	07/08/2009 2.0	1545	10
Method: Chloride	300.0	96	Date mg/L	Analyzed: 0.92	07/09/2009 4.0	1651	20
Method: Alkalinity	310.1	280	Date mg/L	Analyzed: 1.1	07/10/2009 5.0	1153	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40023 Lab Sample ID: 500-19848-8

Date Sampled: 06/30/2009 1155 Date Received:07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0	89	Date	Analyzed:	07/09/2009 170	05
Chloride		mg/L	0.92	4.0	20
Method: 300.0	170	Date	Analyzed:	07/10/2009 12°	13
Sulfate		mg/L	1.3	4.0	20
Method: 310.1	370	Date	Analyzed:	07/10/2009 120)1
Alkalinity		mg/L	1.1	5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40024 Lab Sample ID: 500-19848-9 Date Sampled: 06/30/2009 1410
Date Received: 07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride	80	Date mg/L	Analyzed: 0.92	07/09/2009 1719 4.0	20
Method: 300.0 Sulfate	170	Date mg/L	Analyzed: 6.3	07/10/2009 1228 ⁻ 20	100
Method: 310.1 Alkalinity	350	Date mg/L	Analyzed: 1.1	07/10/2009 1208 5.0	1.0

Client Sample ID:TS40025

Lab Sample ID: 500-19848-10

500-19848-1 Job Number: Sdg Number: KAL462

Date Sampled: 06/30/2009 1400

Date Received:07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Sulfate	57 B	Date mg/L	Analyzed: 0.63	07/08/2009 1614 2.0	10
Method: 300.0 Chloride	140	Date mg/L	Analyzed: 0.92	07/09/2009 1802 4.0	20
Method: 310.1 Alkalinity	360	Date mg/L	Analyzed: 1.1	07/10/2009 1224 5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40026 Lab Sample ID: 500-19848-11 Date Sampled: 07/01/2009 1025 Date Received: 07/07/2009 1030

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method: Sulfate	300.0	73 B	Date mg/L	Analyzed: 0.63	07/08/2009 1628 2.0	10
Method: Chloride	300.0	170	Date mg/L	Analyzed: 4.6	07/10/2009 1311 20	100
Method: Alkalinity		290	Date mg/L	Analyzed: 1.1	07/10/2009 1232 5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40027 Lab Sample ID: 500-19848-12 Date Sampled: 07/01/2009 1045
Date Received: 07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Sulfate	89 / B	Date mg/L	Analyzed: 0.63	07/08/2009 1643 2.0	10
Method: 300.0 Chloride	120	Date mg/L	Analyzed: 0.92	07/09/2009 1831 4.0	20
Method: 310.1 Alkalinity	320	Date mg/L	Analyzed: 1.1	07/10/2009 1239 5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40028 Lab Sample ID: 500-19848-13 Date Sampled: 07/01/2009 1230
Date Received: 07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0	99 B	Date	Analyzed:	07/08/2009 168	57
Sulfate		mg/L	0.63	2.0	10
Method: 300.0	110	Date	Analyzed:	07/09/2009 184	45
Chloride		mg/L	0.92	4.0	20
Method: 310.1	340	Date	Analyzed:	07/10/2009 124	48
Alkalinity		mg/L	1.1	5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40029 Lab Sample ID: 500-19848-14 Date Sampled: 07/01/2009 1230 Date Received: 07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	ŔL		Dilution
Method: 300.0 Chloride	110	Date mg/L	Analyzed: 0.92	07/09/2009 4.0	1928	20
Method: 300.0 Sulfate	140	Date mg/L	Analyzed: 1.3	07/10/2009 4.0	1353	20
Method: 310.1 Alkalinity	350	Date mg/L	Analyzed: 1.1	07/10/2009 5.0	1256	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40030 Lab Sample ID: 500-19848-15 Date Sampled: 07/01/2009
Date Received: 07/07/2009

1355 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride	110	Date mg/L	Analyzed: 0.92	07/09/2009 1942 4.0	20
Method: 300.0 Sulfate	94	Date mg/L	Analyzed: 1.3	07/10/2009 1408 4.0	20
Method: 310.1 Alkalinity	300	Date mg/L	Analyzed: 1.1	07/10/2009 1303 5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40031 Lab Sample ID: 500-19848-16 Date Sampled: 07/01/2009 0000
Date Received: 07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride	100	Date mg/L	Analyzed: 0.92	07/09/2009 1957 4.0	20
Method: 300.0 Sulfate	96	Date mg/L	Analyzed: 1.3	07/10/2009 1422 4.0	20
Method: 310.1 Alkalinity	300	Date mg/L	Analyzed: 1.1	07/10/2009 1324 5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40032 Lab Sample ID: 500-19848-17 Date Sampled: 07/01/2009 1510
Date Received: 07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride	59	Date mg/L	Analyzed: 0.92	07/09/2009 2011 4.0	20
Method: 300.0 Sulfate	150	Date mg/L	Analyzed: 1.3	07/10/2009 1436 4.0	20
Method: 310.1 Alkalinity	320	Date mg/L	Analyzed: 1.1	07/10/2009 1332 5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS40033 Lab Sample ID: 500-19848-18 Date Sampled: 07/02/2009 0955
Date Received: 07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride	120	Date mg/L	Analyzed: 0.92	07/09/2009 2025 4.0	20
Method: 300.0	120			07/10/2009 1451	20
Sulfate	26	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	07/10/2009 1339	
Alkalinity	250	mg/L	1.1	5.0	1.0

Job Number: 500-19848-1 Sdg Number: KAL462

Client Sample ID:TS31004 Lab Sample ID: 500-19848-19 Date Sampled: 07/02/2009

1030 1030

Date Received:07/07/2009

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0		Date	Analyzed:	07/10/2009 1505	
Chloride	51	mg/L	0.92	4.0	20
Sulfate	29	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	07/10/2009 1401	
Alkalinity	240	mg/L	1.1	5.0	1.0

Job Number: 500-19848-1

Sdg Number: KAL462

Client Sample ID:TS31005 Lab Sample ID: 500-19848-20 Date Sampled: 07/02/2009

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Date Received:07/07/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride	51	Date mg/L	Analyzed: 0.92	07/09/2009 2040 4.0	20
Method: 300.0 Sulfate	28	Date mg/L	Analyzed: 1.3	07/10/2009 1548 4.0	20
Method: 310.1 Alkalinity	250	Date mg/L	Analyzed: 1.1	07/10/2009 1417 5.0	1.0



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CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page	1	of	1
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Contact & Company Name:	Telephone: 312332 493	7 x24	Preservative Filtered (*)	E	A	E	E	E	Ċ		Reys Preservation Key: Container Informatio A. H.SO. 1. 40 ml Vial B. HCL 2. 1 L Amber	n Key:
EACHRITSK Address: So W Monroe ST City State Zip CHICAGO IL (COCCO 3 Project Name/Location (City, State): PLANNEW GW SAMPLING Sampler's Printed Name: MICHARL KOHACEN	Fax: 312-332 443 E-mail Address:	Н	# of Containers Container Information	2 2	2 	3 3	9	│ │ 3 METH	3 		C. HNO ₃ 3. 250 ml Plastic D. NaOH 4. 500 ml Plastic E. None 5. Encore F. Other: 6. 2 oz. Glass	
CHICAGO IL COCO3 Project Name/Location (City, State):	ERIC. HRYSUK GAR Project #:	equisies.com	17		7	KANA				/	G. Other: 8. 8 oz. Glass H. Other: 9. Other:	
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M Cooler packed with ice (*)	☐ Intact ☐ I	Not Intact Signa	alure:	POHOGE		Signature:	•		Signature:		Signature:	
Specify Turnaround Requirements:	Sample Receipt:	Firm				Firm/Courier:			Firm/Courier:		Firm:	
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CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page <u>i</u> of <u>l</u>

	n.	202
Lab Work Order	#	

Contact & Company Name:	Telephone:				Preservative	E	A	E	E	E	C		reservation Key:	Keys Container Information Key:
ERIC HRITSUK	312	332	4937	x 24	Filtered (√)							A	. H,SO,	1. 40 ml Vial 2. 1 L Amber
Address:	Fax:				# of Container	2	Z	1	t	l l	ł	C	. HČL . HNO ₃	3. 250 ml Plastic
ERIC HRITSUK Address: 30 W Monroe ST City State Zip	312	332	4434		Container Information	2	i	3	9	_3_	3	ΕΕ	. NaOH . None	4. 500 ml Plastic 5. Encore
City State Zip						PAF	RAMET	RANA	LYSIS 8	METH	OD		Other:	6. 2 oz. Glass 7. 4 oz. Glass
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T540026	7/100	1025	V	/ W	X	X	X	X	X	X				
T540027	1	1045	v	W	X	X	X	X	X	1				
T540028		1230	V	W	X	X	X	X	X	X				
TS40029		1230	V	W	X	X	X	X	X	X				
TS40030		1355	V	W	X	Χ	X	X X	X	X				
TS40031		-	V	W	×	Х	X	X	X	X				
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CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page <u>1</u> of <u>1</u>

Lab Work Order#	

Contact & Company Name:	Telephone:				Preservative	E	A	F	E	E	_	Keys Preservation Key: Container Information Key:
1 % 3 % 1	1	337	4937	×ЭH	Filtered (✓)	1	-					Preservation Key: Container Information Key: A. H.SO. 1. 40 ml Vial B. HCL 2. 1 L Amber
ERIC HRITSOK	Fax:	<u>. J. L</u>	, 1, 0,	<i>3</i> ₹ 4	# of Container	5 2	2	1	i	l	1	C. HNO ₄ 3. 250 ml Plastic
30 W. MONROE ST	312	.332.	4434		Container Information	2	ì	3	9	3	3	D. NaOH 4 500 ml Plastic E. None 5. Encore C. Other 6, 2.02, Glass
City State Zip	E-mail Address	5:				PAR	CAMETE	ER ANA	LYSIS 8	METH	OD /	F. Other: 6. 2.0z. Glass 7. 4 oz. Glass 7. G. Other: 8. 8 oz. Glass
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T540018	9/29/09	1455	V	W	X				X	X		
T540019	724/09	1535	V	W		X	X	X		T-		
TS40020		1000	V	W	X	X	<u>X</u>	X	X	X		
T540021	6/30/09		V	W	X	X	X_{-}	X	X	X		
TS40022	6/30/09	1040	V	W	X	X	X	X	X	X		
T540023	0 4	1155	V	W	X	X	X	X	X	X		
T540024	6/30/09	1410	/	W	X	X	X	X	X	X		MS/MSD.
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Kalamazoo River Superfund Site Former Plainwell Impoundment Groundwater Sampling

Data Review

PLAINWELL, MICHIGAN

PCB, Metals and Miscellaneous Analyses

SDG# KAL481

Analyses Performed By: TestAmerica Laboratories Burlington, Vermont

Report: # 10982R Review Level: Tier III

Project: B0064539.0000.00500

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #KAL481 for samples collected in association with the Plainwell site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

			Sample	Parent		A	nalysis		
Sample ID	Lab ID	Matrix	Collection Date	Sample	voc	svoc	РСВ	MET	MISC
TS40034	807163	Water	9/21/2009				Х	Х	Х
TS40035	807164	Water	9/21/2009				Χ	Х	Х
TS40036	807165	Water	9/21/2009				Х	Х	Х
TS40037	807166	Water	9/21/2009				Χ	Х	Х
TS40038	807167	Water	9/21/2009				Χ	Х	Х
TS40039	807168	Water	9/21/2009				Χ	Х	Х
TS40040	807169	Water	9/21/2009				Χ	Х	Х
TS40041	807170	Water	9/21/2009				Χ	Х	Х
TS40042	807171	Water	9/21/2009				Χ	Х	Х
TS31006	807172	Water	9/21/2009				Χ	Х	Х
TS40043	807422	Water	9/23/2009				Χ	Х	Х
TS40044	807423	Water	9/23/2009				Χ	Х	Х
TS40045	807424	Water	9/23/2009	TS40044			Χ	Х	Х
TS40046	807425	Water	9/23/2009				Χ	Х	Х
TS40047	807426	Water	9/23/2009	TS40046			Χ	Х	Х
TS40048	807427	Water	9/23/2009				Χ	Х	Х
TS40049	807644	Water	9/24/2009				Χ	Х	Х
TS40050	807645	Water	9/24/2009				Χ	Х	Х
TS31007	807646	Water	9/24/2009				Χ	Х	Х
TS31008	807647	Water	9/24/2009	TS31007			Х	Х	Х

Note:

- 1. Miscellaneous parameters include total organic carbon (TOC), total suspended solids (TSS), total dissolved solids (TDS), chloride, sulfate, and alkalinity.
- Matrix spike/matrix spike duplicate/laboratory duplicate was performed on sample locations TS31006 and TS40043.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

			Reported		mance ptable	Not
	Items Reviewed	No	Yes	No	Yes	Required
1.	Sample receipt condition		Х		Х	
2.	Requested analyses and sample results		Х		Х	
3.	Master tracking list		Х		Х	
4.	Methods of analysis		Х		Х	
5.	Reporting limits		Х		Х	
6.	Sample collection date		Х		Х	
7.	Laboratory sample received date		Х		Х	
8.	Sample preservation verification (as applicable)		Х		Х	
9.	Sample preparation/extraction/analysis dates		Х		Х	
10.	Fully executed Chain-of-Custody (COC) form		Х		Х	
11.	Narrative summary of QA or sample problems provided		Х		Х	
12.	Data Package Completeness and Compliance		Х		Х	_

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to (United Stated Environmental Protection Agency) USEPA Method 8082. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 and USEPA Region II (SOP HW-45, Revision 1).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

The data presented in this package has been derived using a procedure developed by TestAmerica as an attempt to improve the analytical process of calibration, identification and quantitation of PCBs as Aroclors. Key components of this procedure include:

Calibration

The response function of the electron capture detector is inherently non-linear. While significant linearization is achieved for this detector by electronic means, some non-linearity remains. Power function linearization is used to straighten the curve and allow the use of response factors for calibration purposes.

During the initial calibration, a response factor is calculated for each peak in the individual Aroclors. A weighted response factor calculation has been used to adjust for non-linearity at the low end of the calibration curve.

Identification

Peak retention times are relative. Retention times are in set windows relative to the time markers DCB and TCX. Time markers adjust for minor variations in column flow or instrument condition and allow the use of very tight windows which minimizes the number of false positive and false negative peak identifications.

The determination of which Aroclor or mixture of Aroclors will produce a chromatogram most similar to that of the residue is made by expressing the unknown sample chromatogram as a linear combination of the Aroclors. The most similar Aroclor or mixture of Aroclors is determined by using a least squares minimization of the difference between the unknown chromatogram and the linear combination of Aroclors. This is similar to the procedure presented by L.E. Silvon, P.M. Schumacher and A. Alford-Stevens for the determination of Aroclor composition from GC/MS level of chlorination results.

Identification/quantitation of Aroclors in samples is based on the combined response of two columns, typically RTX-5 and RTX-35. The pooling of response combines the unique qualities of both columns to derive a more defined Aroclor pattern which is less likely to be affected by interferents. Identification/quantitation data for the individual columns is provided in the package and can be used as a check on the combined column results.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4 °C
377-040 0002	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for all Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All Aroclors associated with calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
TS31007 TS31008	CCV %D	Aroclor 1248	18.0%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial Calibration	%RSD > 20%or a correlation coefficient <0.99	Non-detect	UJ
miliai Calibration	76KSD > 20%01 a correlation coefficient <0.99	Detect	J
	%D >15% (increase in sensitivity)	Non-detect	No Action
Continuing	(Increase in sensitivity)	Detect	J
Calibration	0/D = 150/ (degrees in consistivity)	Non-detect	UJ
	%D >15% (decrease in sensitivity)	Detect	J

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires the surrogate compounds must exhibited recoveries within the method established acceptance limits.

All surrogate recoveries reported from the primary column were within control limits.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the method established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the method established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the method established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TS40044/ TS40045	All Aroclors	0.047 U	0.048 U	AC
TS40046/ TS40047	All Aroclors	0.048 U	0.047 U	AC
TS31007/ TS31008	All Aroclors	0.051 U	0.050 U	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

The determination of Aroclor presence is made by expressing the unknown sample chromatogram as a linear combination of the Aroclors. The most similar Aroclor or mixture of Aroclors is determined by using a least squares minimization of the difference between the unknown chromatogram and the linear combination of Aroclors.

All identified compounds met the specified criteria.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBs

PCBs; SW846 8082	Repo	orted		rmance eptable	Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		Х		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		Х		Х	
B. Field blanks		Х		Х	
Laboratory Control Sample (LCS) %R		Х		Х	
Laboratory Control Sample Duplicate(LCSD) %R					Х
LCS/LCSD Precision (RPD)					Х
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate(MSD) %R		Х		Х	
MS/MSD Precision (RPD)		Х		Х	
Field Duplicate (RPD)		Х		Х	
Surrogate Spike Recoveries		Х		Х	
Dilution Factor		Х		Х	
Moisture Content		Х		Х	
Tier III Validation					
Initial calibration %RSDs		Х		Х	
Continuing calibration %Ds		Х	Х		
System performance and column resolution		Х		Х	
Compound identification and quantitation					
A. Quantitation Reports		Х		Х	
B. RT of sample compounds within the established RT windows		Х		Х	
C. Pattern identification		X		Χ	
D. Transcription/calculation errors present				Х	
E. Reporting limits adjusted to reflect sample dilutions		X RDD role		X nt difference	

[%]RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Methods 6010B, 9060, 300.0, 310.1 and SM2540. Data were reviewed in accordance with USEPA National Functional Guidelines of October 2004.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010B	Water	180 days from collection to analysis	Cooled @ 4 °C; preserved to a pH of less than 2.
SW-846 6010B	Soil	180 days from collection to analysis	Cooled @ 4 °C.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the instrument detection limit (IDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL. No qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration and Continuing Calibration

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within control limits.

All continuing calibration verification standard recoveries were within the control limit.

3.2 CRDL Check Standard

The CRDL check standard serves to verify the linearity of calibration of the analysis at the CRDL. The CRDL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), and potassium (K). The criteria used to evaluate the CRDL standard

analysis are presented below in the CRDL standards evaluation table.

All CRDL standard recoveries were within control limits.

3.3 ICP Interference Control Sample (ICS)

The ICS verifies the laboratories interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS analysis performed on sample locations TS31006 and TS400431 exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
TS40044/ TS40045	Calcium	105000	103000	1.9 %
	Magnesium	24900	24500	1.6 %
	Potsassium	2020 B	2060 B	AC
	Sodium	53800	53200	1.1 %
TS40046/ TS40047	Calcium	160000	159000	0.6 %

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Magnesium	22900	22900	0 %
	Potsassium	1350 B	1310 B	AC
	Sodium	58300	58300	0 %
	Calcium	78400	77300	1.4 %
TS31007/ TS31008	Magnesium	24900	24600	1.2 %
1531007/ 1531006	Potsassium	2810 B	2710 B	AC
	Sodium	36000	35600	1.1 %

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution performed on sample location TS31006 exhibited a %D within the control limit.

A serial dilution was also performed on sample location Ts40043. All serial dilutions were within control limits, with the exception of the analytes presented in the following table.

Sample Locations	Analytes	Serial Dilution (%D)
	Calcium	10.3%
TS40043	Magnesium	11.9%
	Sodium	11.4%

The criteria used to evaluate the serial dilution are presented in the following table. In the case of a serial dilution deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
> UL	Detect	J

8. Furnace Analysis QC

No furnace analyses were performed on the samples.

9. Method of Standard Additions (MSA)

No samples were analyzed following the method of standard additions.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6000/7000	Repo	orted		rmance ptable	Not
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	No	Yes	No	Yes	Required
Inductively Coupled Plasma-Atomic Emission Spec	trometry	(ICP)			
Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Instrument Blanks		Х		Х	
B. Method Blanks		X		X	
C. Equipment/Field Blanks		Х		Х	
Laboratory Control Sample (LCS)		X		Х	
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate (MSD) %R		Х		Х	
MS/MSD Precision (RPD)		Х		Х	
Field/Lab Duplicate (RPD)		Х		Х	
ICP Serial Dilution		Х	X		
Reporting Limit Verification		Х		Х	
Raw Data		Х		Х	
Tier III Validation					
Initial Calibration Verification		Х		Х	
Continuing Calibration Verification		Х		Х	
CRDL Standard		Х		Х	
ICP Interference Check		Х		Х	
Transcription/calculation errors present		Х		Х	
Reporting limits adjusted to reflect sample dilutions		Х		Х	

%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Total Organic Carbon by EPA 9060	Water	28 days from collection to analysis	Cooled @ 4 °C; preserved to a pH of less than 2.
Total Dissolved Solids By EPA 160.1	Water	7 days from collection to analysis	Cooled @ 4 °C.
Total Suspended Solids By EPA 160.2	Water	7 days from collection to analysis	Cooled @ 4 °C.
Chloride by EPA 300.0	Water	28 days from collection to analysis	Cooled @ 4 °C.
Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cooled @ 4 °C.
Alkalinity by EPA 310.1	Water	14 days from collection to analysis	Cooled @ 4 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL. No qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

The MS analysis performed on sample locations TS31006, TS40043, and TS31008 exhibited recoveries within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

The laboratory duplicate sample results exhibited a RPD within the control limit.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	TOC	3.7	4.1	AC
	TDS	535	528	1.3%
TS40044/TS40045	TSS	13.5	13.5	0%
TS40044/ TS40045	Chloride	82	83	1.2%
	Sulfate	62	63	1.6%
	Alkalinity	270	280	3.6%
	TOC	12.2	11.9	2.4%
TS40046/ TS40047	TDS	754	754	0%
1040040/104004/	TSS	19.8	20.8	4.4%

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Chloride	110	110	0%
	Sulfate	140	140	0%
	Alkalinity	310	310	0%
	TOC	4.0	4.2	AC
	TDS	396	407	0.2%
TS31007/ TS31008	TSS	4.6	4.5	2.1%
1531007/1531006	Chloride	66	61	7.8%
	Sulfate	35	32	8.9%
	Alkalinity	230	230	0%

AC Acceptable U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS analysis exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA Lloyd Kahn	Rep	orted		mance ptable	Not Required	
	No	Yes	No	Yes	Kequireu	
Miscellaneous Instrumentation						
Tier II Validation						
Holding times		Х		Х		
Reporting limits (units)		Х		Х		
Blanks			•			
A. Method blanks		Х		Х		
B. Field blanks		Х		Х		
Laboratory Control Sample (LCS) %R		Х		Х		
Laboratory Control Sample Duplicate(LCSD) %R					Х	
LCS/LCSD Precision (RPD)					Х	
Matrix Spike (MS) %R		Х		Х		
Matrix Spike Duplicate(MSD) %R					Х	
MS/MSD Precision (RPD)					Х	
Lab/Field Duplicate (RPD)		Х		Х		
Dilution Factor		Х		Х		
Moisture Content		Х		Х		
Tier III Validation						
Initial calibration %RSD or correlation coefficient		Х		Х		
Continuing calibration %R		Х		Х		
Raw Data		Х		Х		
Transcription/calculation errors present				Х		
Reporting limits adjusted to reflect sample dilutions		X		X		

[%]RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference,

[%]D – difference

VALIDATION PERFORMED

BY: Jeffrey L. Davin

SIGNATURE:

DATE: October 26, 2009

PEER REVIEW: Dennis Capria

DATE: November 6, 2009

CHAIN OF CUSTODY/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

				1	TS40034
Lab Name: _	TestAmerica Burlin	gton	Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG:	KAL481
Phase Type:	WATER		Lab Sample ID:	807163	
Phase Weight:	1020.	(mL)	Date Received:	09/23/09	
Injection Volume:	1.0	(uL)	Date Extracted:	09/24/09	
Dilution Factor:	1.0		Date Analyzed:	10/06/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.049	U
11104-28-2	Aroclor-1221	0.049	U
11141-16-5	Aroclor-1232	0.049	U
53469-21-9	Aroclor-1242	0.049	U
12672-29-6	Aroclor-1248	0.049	U
11097-69-1	Aroclor-1254	0.049	U
11096-82-5	Aroclor-1260	0.049	U

EPA SAMPLE NO.

TS40035 Lab Name: TestAmerica Burlington Lab Code: _ Contract: 27000 KZOO KAL481 Case: SDG: WATER 807164 Phase Type: Lab Sample ID: (mL) Phase Weight: 09/23/09 Date Received: 1.0 09/24/09 Injection Volume: (uL) Date Extracted: Dilution Factor: _____1.0 10/06/09 Date Analyzed: % Solids: Sulfur Clean-up: Ν (Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.052	υ
11104-28-2	Aroclor-1221	0.052	U
11141-16-5	Aroclor-1232	0.052	U
53469-21-9	Aroclor-1242	0.052	U
12672-29-6	Aroclor-1248	0.052	U
11097-69-1	Aroclor-1254	0.052	U
11096-82-5	Aroclor-1260	0.052	U

				Т	S40036
Lab Name: _	TestAmerica Bu	rlington	Lab Code:STLV		
Contract:	27000		Case: KZOO	SDG:	KAL481
Phase Type:	WATER		Lab Sample ID:	807165	
Phase Weight:	1035.	(mL)	Date Received:	09/23/09	
Injection Volume:	1.0	(uL)	Date Extracted:	09/24/09	
Dilution Factor:	1.0		Date Analyzed:	10/06/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER	
12674-11-2	Aroclor-1016	0.048	U	
11104-28-2	Aroclor-1221	0.048	U	
11141-16-5	Aroclor-1232	0.048	U	
53469-21-9	Aroclor-1242	0.048	U	
12672-29-6	Aroclor-1248	0.048	U	
11097-69-1	Aroclor-1254	0.048	U	
11096-82-5	Aroclor-1260	0.048	U	

				TS4	10037
Lab Name:	TestAmerica Burlin	gton	Lab Code: STLV		
Contract: _	27000	_	Case: KZOO	SDG:	KAL481
Phase Type: _	WATER		Lab Sample ID:	807166	
Phase Weight:	1035.	(mL)	Date Received: _	09/23/09	
Injection Volume:	1.0	(uL)	Date Extracted:	09/24/09	
Dilution Factor:	1.0	_	Date Analyzed: _	10/06/09	·····
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

				Т	S40038
Lab Name: _	TestAmerica Bur	lington	Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG:	KAL481
Phase Type:	WATER		Lab Sample ID:	807167	
Phase Weight:	1055.	(mL)	Date Received:	09/23/09	
Injection Volume:	1.0	(uL)	Date Extracted:	09/24/09	
Dilution Factor:	1.0		Date Analyzed:	10/06/09	- 10704
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

					1	r\$40039	
Lab Name: _	TestAmerica Burling	ton	Lab Code:	STLV			
Contract:	27000	_	Case: _	KZOO	SDG:	KAL481	
Phase Type:	WATER	_	La	b Sample ID:	807168		
Phase Weight:	1005.	(mL)	Da	te Received:	09/23/09		
Injection Volume:	1.0	(uL)	Da	te Extracted:	09/24/09		
Dilution Factor:	1.0	nera	Da	ate Analyzed:	10/06/09		
% Solids:			Sulf	fur Clean-up:	N		(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER	
12674-11-2	Aroclor-1016	0.050	U	
11104-28-2	Aroclor-1221	0.050	U	
11141-16-5	Aroclor-1232	0.050	U	
53469-21-9	Aroclor-1242	0.050	U	
12672-29-6	Aroclor-1248	0.050	U	
11097-69-1	Aroclor-1254	0.050	U	
11096-82-5	Aroclor-1260	0.050	U	

					т	S40040	
Lab Name: _	TestAmerica Burlingt	on	Lab Code:	STLV			
Contract:	27000	-	Case: _	KZ00	SDG:	KAL481	
Phase Type:	WATER	-	La	b Sample ID:	807169		
Phase Weight:	1035.	(mL)	Da	te Received:	09/23/09		
Injection Volume:	1.0	_ (uL)	Da	te Extracted:	09/24/09		
Dilution Factor:	1.0		Da	ate Analyzed:	10/06/09		
% Solids:		_	Sul	fur Clean-up:	N	((Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	Ü
12672-29-6	Aroclor-1248	0.048	υ
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

					TS40041
Lab Name: _	TestAmerica Burlin	gton	Lab Code:STLV		
Contract:	27000		Case: KZOO	SDG:	KAL481
Phase Type:	WATER		Lab Sample ID:	807170	
Phase Weight:	1045.	(mL)	Date Received:	09/23/09	
Injection Volume:	1.0	(uL)	Date Extracted:	09/24/09	
Dilution Factor:	1.0		Date Analyzed:	10/06/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	Ü
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

				T240042		
Lab Name: _	TestAmerica Burl	ington	Lab Code: STLV			
Contract:	27000		Case: KZOO	SDG:	KAL481	
Phase Type:	WATER		Lab Sample ID:	807171		
Phase Weight:	1055.	(mL)	Date Received:	09/23/09		
Injection Volume:	1.0	(uL)	Date Extracted:	09/24/09		
Dilution Factor:	1.0		Date Analyzed:	10/06/09		
% Solids:			Sulfur Clean-up:	N	(Y/N)	

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	T U

EPA SAMPLE NO.

(Y/N)

Sulfur Clean-up: N

					TS31006	
Lab Name: _	: TestAmerica Burlington		Lab Code:STLV			
Contract:	27000		Case: KZOO	SDG:	KAL481	
Phase Type:	WATER		Lab Sample ID:	807172		
Phase Weight:	1045.	(mL)	Date Received:	09/23/09		
Injection Volume:	1.0	(uL)	Date Extracted:	09/24/09		
Dilution Factor:	1.0		Date Analyzed:	10/06/09		

% Solids:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	Ū
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	υ

Lab Name	TestAmerica Burlington					TS40043	
Lab Name: _	restamenca burn	ngton	Lab Code: _	STLV			
Contract:	27000		Case:	KZ00	SDG:	KAL481	
Phase Type:	WATER		Lat	o Sample ID:	807422		
Phase Weight:	1040.	(mL)	Da	te Received:	09/24/09		
Injection Volume:	1.0	(uL)	Dat	e Extracted:	09/27/09		
Dilution Factor:	1.0		Da	te Analyzed:	10/07/09		
% Solids:			Sulf	ur Clean-up:	N	(Y/N)	

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	- U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	u
11096-82-5	Aroclor-1260	0.048	U

EPA SAMPLE NO.

TS40044 Lab Name: ___TestAmerica Burlington STLV Lab Code: 27000 Contract: KZOO KAL481 SDG: Case: WATER 807423 Phase Type: Lab Sample ID: 1055. (mL) Phase Weight: 09/24/09 Date Received: 1.0 Injection Volume: (uL) 09/27/09 Date Extracted: Dilution Factor: 1.0 10/07/09 Date Analyzed: % Solids: (Y/N) Sulfur Clean-up:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

				TS4	10045
Lab Name:TestAmerica Burlington		Lab Code:STLV			
Contract:	27000	Warning to the same of the sam	Case: KZOO	SDG:	KAL481
Phase Type:	WATER		Lab Sample ID:	807424	
Phase Weight:	1040.	(mL)	Date Received:	09/24/09	The second second second
Injection Volume:	1.0	(uL)	Date Extracted:	09/27/09	
Dilution Factor:	1.0	No American	Date Analyzed:	10/07/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	υ
12672-29-6	Aroclor-1248	0.048	U
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

				TS40046		
Lab Name: _	TestAmerica Burl	ington	Lab Code: STLV			
Contract:	27000		Case: KZOO	SDG:	KAL481	
Phase Type:	WATER		Lab Sample ID:	807425		
Phase Weight:	1045.	(mL)	Date Received:	09/24/09		
Injection Volume:	1.0	(uL)	Date Extracted:	09/27/09	· · · · · · · · · · · · · · · · · · ·	
Dilution Factor:	1.0	-	Date Analyzed:	10/07/09		
% Solids:			Sulfur Clean-up:	N	(Y/N)	

CAS NO.	COMPOUND	CONCENTRATION	QUALIFIER
		ug/L	
12674-11-2	Aroclor-1016	0.048	U
11104-28-2	Aroclor-1221	0.048	U
11141-16-5	Aroclor-1232	0.048	U
53469-21-9	Aroclor-1242	0.048	U
12672-29-6	Aroclor-1248	0.048	υ
11097-69-1	Aroclor-1254	0.048	U
11096-82-5	Aroclor-1260	0.048	U

Lab Name:	TestAmerica Burlir	naton	Lab Code: STLV	TS	540047
Contract:	27000		Case: KZOO	SDG:	KAL481
Phase Type:	WATER		Lab Sample ID:	807426	
Phase Weight:	1060.	(mL)	Date Received:	09/24/09	
Injection Volume:	1.0	(uL)	Date Extracted:	09/27/09	_
Dilution Factor:	1.0		Date Analyzed:	10/07/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	U

EPA SAMPLE NO.

(Y/N)

						TS40048	
Lab Name: _	TestAmerica Bur	lington	Lab Code:	STLV			
Contract:	27000		Case:	KZOO	SDG: _	KAL481	
Phase Type:	WATER		Lab	Sample ID:	807427		
Phase Weight:	1010.	(mL)	Date	Received:	09/24/09)	
Injection Volume:	1.0	(uL)	Date	Extracted:	09/27/09)	
Dilution Factor:	1.0		Date	e Analyzed:	10/07/09)	

% Solids:

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.050	U
11104-28-2	Aroclor-1221	0.050	U
11141-16-5	Aroclor-1232	0.050	U
53469-21-9	Aroclor-1242	0.050	U
12672-29-6	Aroclor-1248	0.050	U
11097-69-1	Aroclor-1254	0.050	U
11096-82-5	Aroclor-1260	0.050	U

Sulfur Clean-up: N

						TS40049	
Lab Name: _	TestAmerica Burlin	ngton	Lab Code:	STLV			
Contract:	27000		Case:	KZOO	SDG:	KAL481	
Phase Type:	WATER		Lai	b Sample ID:	807644		
Phase Weight:	1000.	(mL)	Da	te Received:	09/25/09	1	
Injection Volume:	1.0	(uL)	Da	te Extracted:	09/27/09)	
Dilution Factor:	1.0		Da	ite Analyzed:	10/07/09)	
% Solids:			Sulf	ur Clean-un:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.050	U
11104-28-2	Aroclor-1221	0.050	U
11141-16-5	Aroclor-1232	0.050	U
53469-21-9	Aroclor-1242	0.050	U
12672-29-6	Aroclor-1248	0.050	U
11097-69-1	Aroclor-1254	0.050	U
11096-82-5	Aroclor-1260	0.050	U

				Т	S40050	
Lab Name: _	TestAmerica Burli	ngton	Lab Code: STLV			
Contract:	27000		Case: KZOO	SDG:	KAL481	
Phase Type:	WATER		Lab Sample ID:	807645		
Phase Weight:	1055.	(mL)	Date Received:	09/25/09		
Injection Volume:	1.0	(uL)	Date Extracted:	09/27/09		
Dilution Factor:	1.0		Date Analyzed:	10/07/09		
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.047	U
11104-28-2	Aroclor-1221	0.047	U
11141-16-5	Aroclor-1232	0.047	U
53469-21-9	Aroclor-1242	0.047	U
12672-29-6	Aroclor-1248	0.047	U
11097-69-1	Aroclor-1254	0.047	U
11096-82-5	Aroclor-1260	0.047	υ

				TS31007	
Lab Name: _	TestAmerica Burlington		Lab Code:STLV		
Contract:	27000		Case: KZOO	SDG: K	AL481
Phase Type:	WATER	******	Lab Sample ID:	807646	
Phase Weight:	990.	(mL)	Date Received:	09/25/09	
Injection Volume:	1.0	(uL)	Date Extracted:	09/27/09	
Dilution Factor:	1.0		Date Analyzed:	10/07/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.051	U
11104-28-2	Aroclor-1221	0.051	U
11141-16-5	Aroclor-1232	0.051	U
53469-21-9	Aroclor-1242	0.051	U
12672-29-6	Aroclor-1248	0.051	U
11097-69-1	Aroclor-1254	0.051	U
11096-82-5	Aroclor-1260	0.051	U

					TS31008
Lab Name: _	Lab Name:TestAmerica Burlington		Lab Code: STLV		
Contract:	27000		Case: KZOO	SDG:	KAL481
Phase Type:	WATER		Lab Sample ID:	807647	
Phase Weight:	1000.	(mL)	Date Received:	09/25/09	
Injection Volume:	1.0	(uL)	Date Extracted:	09/27/09	-
Dilution Factor:	1.0		Date Analyzed:	10/07/09	
% Solids:			Sulfur Clean-up:	N	(Y/N)

CAS NO.	COMPOUND	CONCENTRATION ug/L	QUALIFIER
12674-11-2	Aroclor-1016	0.050	U
11104-28-2	Aroclor-1221	0.050	U
11141-16-5	Aroclor-1232	0.050	U
53469-21-9	Aroclor-1242	0.050	U
12672-29-6	Aroclor-1248	0.050	U
11097-69-1	Aroclor-1254	0.050	U
11096-82-5	Aroclor-1260	0.050	U

-1-

INORGANIC ANALYSES DATA SHEET

Lab Name:	TestAmer	ica Burlington	Contrac	et: <u>29000</u>				
Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	. :	KAL481
Matrix (soi	l/water):	WATER		Lab Sample ID:		807171	<u> </u>	
Level (low/	med):	LOW		Date Received:		09/23/	09	· · · · · · · · · · · · · · · · · · ·
% Solids:	0.0	_						
		Concentration Un	nits (ug/L or mg/	kg dry weight):		UG/L		-
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	110000		# J	₽	1
		7439-95-4	Magnesium	26700		足了	P	
		7440-23-5	Sodium	56100		p T	P	
		7440-09-7	Potassium	2660	В		P	

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:			,	
-				

INORGANIC ANALYSES DATA SHEET

								TS31006
Lab Name:	TestAmeri	ca Burlington	Contrac	et: <u>29000</u>				
Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	. :	KAL481
Matrix (soi	l/water):	WATER		Lab Sample ID:		807172	2	
Level (low/	med):	LOW		Date Received:		09/23/	/09	
% Solids:	0.0							
		Concentration Un	its (ug/L or mg/	/kg dry weight):		UG/L		_
		CAS No.	Analyte	Concentration	С	Q	М	
		7440-70-2	Calcium	76000		E	P	
		7439-95-4	Magnesium	24300		l B	P	j
		7440-23-5	Sodium	36400		p r	P	
		7440-09-7	Potassium	3020	В	<u> </u>	P	

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
-					

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

									TS31007
Lab Name:	TestAmer	ica Burlingt	on	Contrac	et: 29000				
Lab Code:	STLV	Case No.	.: <u>KZOC</u>	SAS	No.:		SDG No	.:	KAL481
Matrix (soi	L/water):	WATER			Lab Sample ID:		807646	5	
Level (low/r	med):	LOW			Date Received:		09/25/	09	
% Solids:	0.0								
		.							
		Concentration	n Units (ug/L or mg/	/kg dry weight):		UG/L		_
		CAS No.	A	nalyte	Concentration	С	Q	М	
		7440-70-2	Calc		78400		E o	P	
		7439-95-4		esium	24900		e s	P	
		7440-23-5	Sodi		36000		E J	P	
		7440-09-7	Pota	ssium	2810	В		P	
Color Bef		orless	Clarity	Before:	clear	Τε	exture:		
Color Aft	er: col	orless	Clarity	After:	clear	A	rtifact	s:	

Form I - IN

Comments:

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

TS31008	

¥.

ab Name:	TestAmer	ica Burlington	Contr	act: 29000	
Lab Code:	STLV	Case No.:		AS No.:	SDG No.: KAL481
Matrix (soi	1/water):	WATER		Lab Sample ID:	807647
Level (low/		LOW		Date Received:	09/25/09
% Solids:	0.0	-			
		Concentration U	nits (ug/L or m	g/kg dry weight):	UG/L
		CAS No.	Analyte	Concentration	C Q M
		7440-70-2	Calcium	77300	Ė J P
		7439-95-4	Magnesium	24600	EJ P
		7440-23-5	Sodium	35600	E 3 P
		7440-09-7	Potassium	2710 E	3 P
Color Be	efore: co	lorless C	larity Before:	clear	Texture:
Color Af	ter: co	lorless C	larity After:	clear	Artifacts:
Comments	3:				

INORGANIC ANALYSES DATA SHEET

TS40034	

		,					1540054
Lab Name:	TestAmerica	a Burlington		Contract:	29000		
Lab Code:	STLV	Case No.:	KZOO	_ SAS No.:		SDG No.:	KAL481
Matrix (soil	L/water):	WATER		Lab	Sample ID:	807163	***************************************
Level (low/r	$ned): \underline{LO}$	W		Date	Received:	09/23/09	* - (-*
% Solids:	0.0						
	Cor	ncentration Uni	its (ug/L	or mg/kg dry	weight):	UG/L	

CAS No.	Analyte	Concentration	С	Q	м
7440-70-2	Calcium	157000		EJ	P
7439-95-4	Magnesium	34400	1	F - T	P
7440-23-5	Sodium	57500		車で	P
7440-09-7	Potassium	3060	В		P

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	Marie Later Control of the Control o
Comments:					

INORGANIC ANALYSES DATA SHEET

	TS400	35	

				1540033
Lab Name:	TestAme	rica Burlington	Contract: 29000	
Lab Code:	STLV	Case No.: KZOO	SAS No.:	SDG No.: KAL481
Matrix (soi	1/water):	WATER	_ Lab Sample ID:	807164
Level (low/	med):	LOW	Date Received:	09/23/09
% Solids:	0.0			
		Concentration Units (ug	g/L or mg/kg dry weight):	UG/L

CAS No.	Analyte	Concentration	С	Q	м
7440-70-2	Calcium	125000	T	Ė ¬Ţ	l P
7439-95-4	Magnesium	29600	Ī	IE 3	P
7440-23-5	Sodium	74900		BJ	P
7440-09-7	Potassium	2080	B		P

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					

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INORGANIC ANALYSES DATA SHEET

TS40036	

			15.0030
Lab Name: <u>Tes</u>	tAmerica Burlington	Contract: <u>29000</u>	
Lab Code: STL	V Case No.: KZOO	SAS No.:	SDG No.: KAL481
Matrix (soil/wa	ter): WATER	Lab Sample ID:	807165
Level (low/med)	: LOW	Date Received:	09/23/09
% Solids: 0.0			
	Concentration Units (ug/	L or mg/kg dry weight):	UG/L

CAS No.	Analyte	Concentration	С	Q	м
7440-70-2	Calcium	104000	 	E-5	P
7439-95-4	Magnesium	26600	İ	E	P
7440-23-5	Sodium	94100	Ì	it 7	P
7440-09-7	Potassium	2070	В	l	P

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

TS40037	- 1

					_		
Lab Name: <u>TestAme</u>	erica Burlingto	n Cont	ract: 29000				
Lab Code: STLV	Case No.:	<u>KZOO</u> S	AS No.:		SDG N	o.:	KAL481
Matrix (soil/water)	: WATER		Lab Sample ID:		80716	56	
Level (low/med):	LOW		Date Received:		09/23	3/09	
% Solids: 0.0							
	Concentration	Units (ug/L or m	ng/kg dry weight):		UG/I		_
	CAS No.	Analyte	Concentration	С	Q	М	and the second s
	7440-70-2	Calcium	127000	 	FT	P	
	7439-95-4	Magnesium	30900		IR J	P]
	7440-23-5	Sodium	66900	1	B	P	<u>-</u>

2220 B

Potassium

7440-09-7

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

Lab Name: TestAmerica Burlington Contract: 29000 Lab Code: STLV Case No.: KZOO SAS No.: SDG No.: KAL481 Matrix (soil/water): WATER Lab Sample ID: 807167 Level (low/med): LOW Date Received: 09/23/09 % Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L CAS No. Analyte Concentration CQ M 7440-70-2 Calcium 129000 ET P 7439-95-4 Magnesium 28000 ET P 7440-23-5 Sodium 67900 ET P	Lab Code: STLV									TS40038
Matrix (soil/water): WATER Lab Sample ID: 807167 Level (low/med): LOW Date Received: 09/23/09 % Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 129000 F J P 7439-95-4 Magnesium 28000 F J P 7440-23-5 Sodium 67900 F J P	Lab Code: STLV Case No.: M200 BAS No. MATER Lab Sample ID: 807167 Level (low/med): LOW Date Received: 09/23/09 % Solids: 0.0 Concentration Units (ug/L or mg/kg dry weight): UG/L CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 129000 F J P 7439-95-4 Magnesium 28000 F J P 7440-23-5 Sodium 67900 F J P	Lab Name:	TestAmer	ica Burlington	Contrac	t: <u>29000</u>				
Level (low/med): LOW Date Received: 09/23/09	Level (low/med): LOW Date Received: 09/23/09	Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL481
Level (low/med): LOW Date Received: 09/23/09	Level (low/med): LOW Date Received: 09/23/09	Matrix (soi	.1/water):	WATER		Lab Sample ID:		80716	7	
Concentration Units (ug/L or mg/kg dry weight): UG/L CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 129000 F P 7439-95-4 Magnesium 28000 F P 7440-23-5 Sodium 67900 F P	Concentration Units (ug/L or mg/kg dry weight): UG/L CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 129000 F P 7439-95-4 Magnesium 28000 F P 7440-23-5 Sodium 67900 F P			LOW		Date Received:		09/23	/09	
CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 129000 F P 7439-95-4 Magnesium 28000 F P 7440-23-5 Sodium 67900 F P	CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 129000 F P 7439-95-4 Magnesium 28000 F P 7440-23-5 Sodium 67900 F P	% Solids:	0.0							
CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 129000 F P 7439-95-4 Magnesium 28000 F P 7440-23-5 Sodium 67900 F P	CAS No. Analyte Concentration C Q M 7440-70-2 Calcium 129000 E P 7439-95-4 Magnesium 28000 E P 7440-23-5 Sodium 67900 E P			- Concentration II	nits (ng/L or mg/	kg dry weight):		UG/L		
7440-70-2 Calcium 129000 F 7 P 7439-95-4 Magnesium 28000 F 7 P 7440-23-5 Sodium 67900 F 7 P	CAS No. Analyse State of the control of the contro			Concentration of	ircs (ag/ ir or ing/					-
7439-95-4 Magnesium 28000 E J P	7439-95-4 Magnesium 28000 EJ P			CAS No.	Analyte	Concentration	С	Q	М	
7439-95-4 Magnesium 28000 FJ P	7439-95-4 Magnesium 28000 F			7440-70-2	Calcium	129000		FJ	P	
					Magnesium	28000		F J	P	
	7440-09-7 Potassium 1960 B P			7440-23-5	Sodium	67900	1	t	P	
7440-09-7 Potassium 1960 B P				7440-09-7	Potassium	1960	В		P	

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

TS40039	

					j		1340039
Lab Name: <u>TestA</u>	merica Burlington	Contrac	t: <u>29000</u>				
Lab Code: STLV	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL481
Matrix (soil/wate:	r): WATER		Lab Sample ID:		80716	3	
Level (low/med):	LOW		Date Received:		09/23	/09	
% Solids: 0.0							
	Concentration Un:	its (ug/L or mg/	kg dry weight):		UG/L		_
	CAS No.	Analyte	Concentration	С	Q	М	
							1

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	150000		車づ	P
7439-95-4	Magnesium	29300		E J	P
7440-23-5	Sodium	65500		E 3	P
7440-09-7	Potassium	2010	В		P

Color Before: colorless Clarity Before: clear Texture:	
Color After: colorless Clarity After: clear Artifacts:	
Comments:	

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

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11111	OPERT LIE	110.	
	TS40040		

Lab Name: TestAme	rica Burlington	Contra	ct: <u>29000</u>				
Lab Code: STLV	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL481
Matrix (soil/water):	WATER		Lab Sample ID:		807169)	
Level (low/med):	LOW		Date Received:		09/23/	/09	
% Solids: 0.0							
	Concentration Un	its (ug/L or mg	/kg dry weight):		UG/L		
	CAS No.	Analyte	Concentration	С	Q	М]

Calcium

Sodium

Magnesium

Potassium

114000

23200

63400

1770

В

7440-70-2

7439-95-4

7440-23-5

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				
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INORGANIC ANALYSES DATA SHEET

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Lab Name:	TestAmer	ica Burlington		Contract:	29000	<u></u>	
Lab Code:	STLV	Case No.:	KZOO	SAS No.:		SDG No.:	KAL481
Matrix (soi	l/water):	WATER		Lab	Sample ID:	807170	
Level (low/	med):	LOW		Date	e Received:	09/23/09	
% Solids:	0.0	-					
		Concentration Un	its (ug/	L or mg/kg dr	y weight):	UG/L	

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	87400		111	P
7439-95-4	Magnesium	23000		E-T	P
7440-23-5	Sodium	76500	l	IR T	P
7440-09-7	Potassium	2200	В		P

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

TS400	143	

				1540043
Lab Name:	TestAmer	ica Burlington	Contract: 29000	
Lab Code:	STLV	Case No.: KZOO	SAS No.:	SDG No.: KAL481
Matrix (soi	l/water):	WATER	Lab Sample ID:	807422
Level (low/	med):	LOW	Date Received:	09/24/09
% Solids:	0.0	-		
		Concentration Units (ug,	/L or mg/kg dry weight):	UG/L

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	98600	1-	ET	P
7439-95-4	Magnesium	23300	Ī	ET	P
7440-23-5	Sodium	24100	1	IE J	P
7440-09-7	Potassium	2590	lB	1	l D

Color Before: colorless Clarity Before: clear Texture:

Color After: colorless Clarity After: clear Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

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Lab Name:	TestAmer:	ica Burlington	Contrac	et: 29000					
Lab Code:	STLV	Case No.:	KZOO SAS	No.:		SDG No	.:	KAL481	-
Matrix (soil	l/water):	WATER		Lab Sample ID:		807423	3		
Level (low/r	med):	LOW		Date Received:		09/24/	/09		
% Solids:	0.0								
		Concentration Un	its (ug/L or mg/	kg dry weight):		UG/L		_	
		CAS No.	Analyte	Concentration	С	Q	М		
		7440-70-2	Calcium	105000		\$	l P	! ` 	

24900

53800

2020

Magnesium

Potassium

Sodium

7439-95-4

7440-23-5

7440-09-7

Color Before:	colorless	Clarity Before:	clear	Texture:
Color After:	colorless	Clarity After:	clear	Artifacts:
Comments:				
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

							1540043
Lab Name:	TestAmer	ica Burlington	Contra	ct: 29000		<u> </u>	
Lab Code:	STLV	Case No.:	KZOO SAS	3 No.:		SDG No.	KAL481
Matrix (soi	l/water):	WATER		Lab Sample ID:	5	807424	
Level (low/	med):	LOW		Date Received:	(09/24/0	9
% Solids:	0.0						
4 SOTIUS:	0.0	_					
		Concentration Ur	nits (ug/L or mg	/kg dry weight):		UG/L	
		CAS No.	Analyte	Concentration	С	Q	М
		7440-70-2	Calcium	103000		ej İ	P
		7439-95-4	Magnesium	24500		E J	P
		7440-23-5	Sodium	53200		<u> </u>	P
		7440-09-7	Potassium	2060	B		P

clear

clear

Texture:

Artifacts:

Clarity Before:

Clarity After:

Color Before: colorless

colorless

Color After:

Comments:

INORGANIC ANALYSES DATA SHEET

Lab Name:	TestAmeri	.ca Burlington	n Contra	et: 29000	
Lab Code:	STLV	Case No.:	KZOO SAS	No.:	SDG No.: KAL481
Matrix (soi	.l/water):	WATER		Lab Sample ID:	807425
Level (low/	med):	LOW		Date Received:	09/24/09
% Solids:	0.0				
		Concentration 1	Units (ug/L or mg,	/kg dry weight):	UG/L
		CAS No.	Analyte	Concentration	C Q M
		7440-70-2	Calcium	160000	P P
		7439-95-4	Magnesium	22900	E3 P
		7440-23-5	Sodium	58300	E J P
		7440-09-7	Potassium	1350	B P
Color Be	famo, gol	orless (Clarity Before:	clear	Texture:
Color Af	ter: col		Clarity After:	clear	Artifacts:
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Comments	s:				

INORGANIC ANALYSES DATA SHEET

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Lab Name:	TestAmer	ica Burlington	Con	ntract: 29000				
Lab Code:	STLV	Case No.:	KZOO	SAS No.:	_ SDG	No.:	KAL481	
Matrix (soi	1/water):	WATER		Lab Sample ID:	8074	126		
Level (low/	med):	LOW		Date Received:	09/2	24/09		
% Solids:	0.0							
,		- Concentration U	Inits (ug/L or	r mg/kg dry weight):	UG/	<u>'L</u>	_	
		CAS No.	Analyte	Concentration	C Q	М		
							-	
		7440-70-2	Calcium	159000	E J	P	<u> </u>	
		7439-95-4	Magnesium	22900	TE J	P P	-	
		7440-23-5	Sodium	58300 1310	 E	P P	-	
		7440-09-7	Potassium	1310	<u> </u>	<u> </u>	_!	
Color Be	fore: co	olorless	Clarity Before	e: clear	Textu	re:		
Color Af	iter: cc	olorless	Clarity After:	: clear	Artif	acts:	4	
Comments	;:							
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INORGANIC ANALYSES DATA SHEET

TS40048	***************************************
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Lab Name:	TestAmer	ica Burlington		Contract:	29000		
Lab Code:	STLV	Case No.:	KZOO	SAS No.:		SDG No.:	KAL481
Matrix (soil	/water):	WATER		Lab	Sample ID:	807427	
Level (low/m	ned):	LOW		Dat	e Received:	09/24/09	
% Solids:	0.0	-					
		Concentration Un	its (na/T	or ma/ka dr	weight):	IIC/T	

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	93200		¥ -5	P
7439-95-4	Magnesium	21900		I S	P
7440-23-5	Sodium	67000		B	P
7440-09-7	Potassium	1770	В		P

Color Before:	colorless	Clarity Before:	clear	Texture:	And the second s
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					

Lab Name: <u>Test</u> Lab Code: <u>STLV</u> Matrix (soil/wate	America Burlingtor Case No.:						EPA SAMPLE NO.
Lab Code: STLV							TS40049
	Case No.:	Contra	act: 29000			-	
Matrix (soil/wate	, 	KZOO SA	S No.:		SDG No	.:	KAL481
	er): WATER		Lab Sample ID:		80764	4	
Level (low/med):	LOW		Date Received:		09/25,	/09	
% Solids: 0.0							
general and an analysis of the second							
	Concentration U	nits (ug/L or mo	g/kg dry weight):		UG/L		_
	CAS No.	Analyte	Concentration	С	Q	м	
	7440-70-2	Calcium	107000	1	Ł J	P	
	7439-95-4	Magnesium	26900		EJ	P	
	7440-23-5	Sodium	74400	;	EJ	P	
	7440-09-7	Potassium	2680	B		P]

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	
Comments:					
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

Lab Name: TestAmerica Burlington Contract: 29000

% Solids:

0.0

Matrix (soil/water): WATER Lab Sample ID: 807645

Level (low/med): LOW Date Received: 09/25/09

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	С	Q	М
7440-70-2	Calcium	92100			P
7439-95-4	Magnesium	22100		IE J	P
7440-23-5	Sodium	41000		FJ	P
7440-09-7	Potassium	1180	В	ľ	P

Color Before:	colorless	Clarity Before:	clear	Texture:	
Color After:	colorless	Clarity After:	clear	Artifacts:	Petrolecular
Comments:					

WET CHEMISTRY

Sample Report Summary

Client Sample No.

TS40034

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807163

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	811	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	13.0	
5310	Organic Carbon, Total	09/24/09	BLKTO092409A	mg/L	1	1.0	7.3	
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Printed on: 10/16/09 10:41 AM

WET CHEMISTRY

Sample Report Summary

Client Sample No.

TS40035

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807164

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

Backed	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
Method 2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	671	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	14.0	
5310	Organic Carbon, Total	09/24/09	BLKTO092409A	mg/L	1	1.0	5.4	
	,							
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Printed on: 10/16/09 10:41 AM

WET CHEMISTRY

Sample Report Summary

Client Sample No.

TS40036

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807165

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKD\$092809A	mg/L	1	5.0	637	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	8.9	
5310	Organic Carbon, Total	09/24/09	BLKT0092409A	mg/L	1	1.0	2.7	
	,							

Printed on: 10/16/09 10:41 AM

Sample Report Summary

Client Sample No.
TS40037

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807166

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

	Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
	2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	664	
	2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	13.8	
	5310	Organic Carbon, Total	09/24/09	BLKTO092409A	mg/L	1	1.0	3.9	
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Sample Report Summary

Client Sample No.

TS40038

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807167

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

Method Parameter Analytical Run Date Analytical Batch Units DF RL Conc. Qua 2540 Total Dissolved Solids 09/28/09 BLKDS092809A mg/L 1 5.0 662 2540 Total Suspended Solids 09/28/09 BLKTS092809A mg/L 0 0.50 15.8 5310 Organic Carbon, Total 09/24/09 BLKT0092409A mg/L 1 1.0 4.3	_
5310 Organic Carbon, Total 09/24/09 BLKTO092409A mg/L 1 1.0 4.3	

Sample Report Summary

Client Sample No.

TS40039

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807168

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	739	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	27.7	
5310	Organic Carbon, Total	09/24/09	BLKTO092409A	mg/L	1	1.0	5.6	
			-					

Sample Report Summary

Client Sample No.
TS40040

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807169

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	583	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	17.1	
5310	Organic Carbon, Total	09/24/09	BLKT0092409A	mg/L	1	1.0	5.1	

Sample Report Summary

Client Sample No.

TS40041

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807170

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

	Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
-	2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	526	
	2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	5.8	
	5310	Organic Carbon, Total	09/24/09	BLKTO092409A	mg/L	1	1.0	2.1	
			,						

Sample Report Summary

Client Sample No.

T240042

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807171

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	583	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	6.2	
5310	Organic Carbon, Total	09/24/09	BLKTO092409A	mg/L	1	1.0	5.2	
								ļ
				,				

Sample Report Summary

Client Sample No.

TS31006

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807172

Matrix: WATER

Client: BBLKAL

Date Received: 09/23/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	391	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	2.8	
5310	Organic Carbon, Total	09/24/09	BLKTO092409A	mg/L	1	1.0	4.7	

Sample Report Summary

Client Sample No.

TS40043

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807422

Matrix: WATER

Client: BBLKAL

Date Received: 09/24/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	437	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	5.2	
5310	Organic Carbon, Total	09/25/09	BLKT0092509A	mg/L	1	1.0	7.8	
				in				

Sample Report Summary

Client Sample No.

TS40044

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807423

Matrix: WATER

Client: BBLKAL

Date Received: 09/24/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	535	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	13.5	
5310	Organic Carbon, Total	09/25/09	BLKTO092509A	mg/L	1	1.0	3.7	
			:					

Sample Report Summary

Client Sample No.

TS40045

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807424

Matrix: WATER

Client: BBLKAL

Date Received: 09/24/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	528	Sumi
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	13.5	
5310	Organic Carbon, Total	09/25/09	BLKTO092509A	mg/L	1	1.0	4.1	
		1	1	1	1	1		i

Sample Report Summary

Client Sample No.

TS40046

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807425

Matrix: WATER

Client: BBLKAL

Date Received: 09/24/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	754	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	19.9	
5310	Organic Carbon, Total	09/25/09	BLKTO092509A	mg/L	1	1.0	12.2	

Sample Report Summary

Client Sample No.
TS40047

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807426

Matrix: WATER

Client: BBLKAL

Date Received: 09/24/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	754	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	20.8	
5310	Organic Carbon, Total	09/25/09	BLKTO092509A	mg/L	1	1.0	11.9	
				3				

Sample Report Summary

Client Sample No.

TS40048

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807427

Matrix: WATER

Client: BBLKAL

Date Received: 09/24/09

% Solids:

Meth	and T	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
254		Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	508	
254	ľ	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	14.0	
531	0	Organic Carbon, Total	09/25/09	BLKTO092509A	mg/L	1	1.0	2.5	
		i							

Sample Report Summary

Client Sample No.

TS40049

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807644

Matrix: WATER

Client: BBLKAL

Date Received: 09/25/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL_	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	574	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	11.0	
5310	Organic Carbon, Total	09/29/09	BLKT0092909B	mg/L	1	1.0	2.5	
								1

Sample Report Summary

Client Sample No.

TS40050

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807645

Matrix: WATER

Client: BBLKAL

Date Received: 09/25/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	446	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	12.9	
5310	Organic Carbon, Total	09/29/09	BLKT0092909B	mg/L	1	1.0	3.3	
				:				
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Sample Report Summary

Client Sample No.

TS31007

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807646

Matrix: WATER

Client: BBLKAL

Date Received: 09/25/09

% Solids:

Method	Parameter	Analytical Run Date	Analytical Batch	Units	DF	RL	Conc.	Qual.
2540	Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	396	
2540	Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	4.6	
5310	Organic Carbon, Total	09/29/09	BLKTO092909B	mg/L	1	1.0	4.0	
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			'					

Sample Report Summary

Client Sample No.
TS31008

Lab Name: TestAmerica Burlington

Contract: 64539.0.005

SDG No.: KAL481

Lab Code: TALVT

Case No.: KZOO

Lab Sample ID: 807647

Matrix: WATER

Client: BBLKAL

Date Received: 09/25/09

% Solids:

Parameter	Analytical Run Date	Analytical Batch	Units	DF.	RL	Conc.	Qual
Total Dissolved Solids	09/28/09	BLKDS092809A	mg/L	1	5.0	407	
Total Suspended Solids	09/28/09	BLKTS092809A	mg/L	0	0.50	4.5	
Organic Carbon, Total	09/29/09	BLKTO092909B	mg/L	1	1.0	4.2	
	Total Dissolved Solids Total Suspended Solids	Total Dissolved Solids 09/28/09 Total Suspended Solids 09/28/09	Total Dissolved Solids 09/28/09 BLKDS092809A Total Suspended Solids 09/28/09 BLKTS092809A	Total Dissolved Solids 09/28/09 BLKDS092809A mg/L Total Suspended Solids 09/28/09 BLKTS092809A mg/L	Total Dissolved Solids 09/28/09 BLKDS092809A mg/L 1 Total Suspended Solids 09/28/09 BLKTS092809A mg/L 0	Total Dissolved Solids 09/28/09 BLKDS092809A mg/L 1 5.0 Total Suspended Solids 09/28/09 BLKTS092809A mg/L 0 0.50	Total Dissolved Solids 09/28/09 BLKDS092809A mg/L 1 5.0 407 Total Suspended Solids 09/28/09 BLKTS092809A mg/L 0 0.50 4.5

Client Sample ID:TS40034 Lab Sample ID: 500-21398-1 Job Number:

500-21398-1

Date Sampled: 09/21/2009 Date Received:09/29/2009

1503 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0		Date	Analyzed:	09/30/2009 1335	
Chloride	91	mg/L	0.92	4.0	20
Sulfate	150	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	09/30/2009 1518	
Alkalinity	370	mg/L	1.1	5.0	1.0

Client Sample ID:TS40035 Lab Sample ID: 500-21398-2

Job Number: 500-21398-1

Date Sampled: 09/21/2009 1545
Date Received: 09/29/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride Sulfate	130 57	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 0933 4.0 4.0	20 20
Method: 310.1 Alkalinity	360	Date mg/L	Analyzed: 1.1	09/30/2009 1526 5.0	1.0

Client Sample ID:TS40036 Lab Sample ID: 500-21398-3

Job Number: 500-21398-1

Date Sampled: 09/21/2009 1718 Date Received:09/29/2009 1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Sulfate	57	Date mg/L	Analyzed: 1.3	10/01/2009 0948 4.0	20
Method: 300.0 Chloride	160	Date mg/L	Analyzed: 2.3	10/02/2009 1458 10	50
Method: 310.1 Alkalinity	280	Date mg/L	Analyzed: 1.1	09/30/2009 1533 5.0	1.0

Client Sample ID:TS40037 Lab Sample ID: 500-21398-4 Date Sampled: 09/22/2009 1024 Date Received: 09/29/2009 1030

Job Number: 500-21398-1

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0		Date	Analyzed:	10/01/2009 1002	
Chloride	110	mg/L	0.92	4.0	20
Sulfate	81	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	09/30/2009 1542	
Alkalinity	330	mg/L	1.1	5.0	1.0

Client Sample ID:TS40038 Lab Sample ID: 500-21398-5

Job Number: 500-21398-1

Date Sampled: 09/22/2009 0935 Date Received:09/29/2009 1030

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method: 3 Chloride Sulfate	300.0	140 88	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1016 4.0 4.0	20 20
Method: 3 Alkalinity	310.1	300	Date mg/L	Analyzed: 1.1	09/30/2009 1549 5.0	1.0

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Job Number: 500-21398-1

Client Sample ID:TS40039 Lab Sample ID: 500-21398-6 Date Sampled: 09/22/2009

1140

Date Received:09/29/2009

1030

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method: Chloride Sulfate	300.0	120 130	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1031 4.0 4.0	20 20
Method: Alkalinity	310.1	320	Date mg/L	Analyzed: 1.1	09/30/2009 1611 5.0	1.0

Job Number:

500-21398-1

Client Sample ID:TS40040 Lab Sample ID: 500-21398-7 Date Sampled: 09/22/2009

Date Received:09/29/2009

1146 1030

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method: Chloride Sulfate	300.0	120 80	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1045 4.0 4.0	20 20
Method: Alkalinity	310.1	270	Date mg/L	Analyzed: 1.1	09/30/2009 1618 5.0	1.0

Client Sample ID:TS40041 Lab Sample ID: 500-21398-8 Date Sampled: 09/22/2009

1449 1030 500-21398-1

Job Number:

Date Received:09/29/2009

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0		Date	Analyzed:	10/01/2009 1059	
Chloride	130	mg/L	0.92	4.0	20
Sulfate	28	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	09/30/2009 1626	
Alkalinity	250	mg/L	1.1	5.0	1.0

Client Sample ID:TS40042 Lab Sample ID: 500-21398-9

Job Number: 500-21398-1

Date Sampled: 09/22/2009

1455 1030

Date Received:09/29/2009

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method:	300.0	0.4		Analyzed:		00
Chloride Sulfate		91 86	mg/L mg/L	0.92 1.3	4.0 4.0	20 20
Method: Alkalinity	310.1	270	Date mg/L	Analyzed: 1.1	09/30/2009 1634	1.0

Client Sample ID:TS31006 Lab Sample ID: 500-21398-10

1430

500-21398-1

Job Number:

Date Sampled: 09/21/2009 Date Received:09/29/2009

1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride Sulfate	65 33	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1156 4.0 4.0	20 20
Method: 310.1 Alkalinity	220	Date mg/L	Analyzed: 1.1	09/30/2009 1641 5.0	1.0

0933

500-21398-1

Job Number:

Client Sample ID:TS40043 Lab Sample ID: 500-21398-11 Date Sampled: 09/23/2009 Date Received: 09/29/2009

1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0		Date	Analyzed:	10/01/2009 1239	
Chloride	47	mg/L	0.92	4.0	20
Sulfate	34	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	09/30/2009 1818	
Alkalinity	290	mg/L	1.1	5.0	1.0

Client Sample ID:TS40044 Lab Sample ID: 500-21398-12 Job Number: 500-21398-1

Date Sampled: 09/23/2009 0945 Date Received:09/29/2009 1030

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method: Chloride Sulfate	300.0	82 62	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1322 4.0 4.0	20 20
Method: Alkalinity	310.1	270	Date mg/L	Analyzed: 1.1	09/30/2009 1656 5.0	1.0

Client Sample ID:TS40045 Lab Sample ID: 500-21398-13 Date Sampled: 09/23/2009

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500-21398-1

Date Received:09/29/2009

1030

Job Number:

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method: Chloride Sulfate	300.0	83 63	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1337 4.0 4.0	20 20
Method: Alkalinity	310.1	280	Date mg/L	Analyzed: 1.1	09/30/2009 1704 5.0	1.0

Job Number: 500-21398-1

Client Sample ID:TS40046 Lab Sample ID: 500-21398-14 Date Sampled: 09/23/2009

1148 1030

Date Received:09/29/2009

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0		Date	Analyzed:	10/01/2009 1351	
Chloride	110	mg/L	0.92	4.0	20
Sulfate	140	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	09/30/2009 1712	
Alkalinity	310	mg/L	1.1	5.0	1.0

Client Sample ID:TS40047 Lab Sample ID: 500-21398-15 Job Number:

500-21398-1

Date Sampled: 09/23/2009

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Date Received:09/29/2009

1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0		Date	Analyzed:	10/01/2009 1405	
Chloride	110	mg/L	0.92	4.0	20
Sulfate	140	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	09/30/2009 1719	
Alkalinity	310	mg/L	1.1	5.0	1.0

Client Sample ID:TS40048 Lab Sample ID: 500-21398-16 Date Sampled: 09/23/2009

1250

Job Number: 500-21398-1

Date Received:09/29/2009

1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride Sulfate	120 27	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1448 4.0 4.0	20 20
Method: 310.1 Alkalinity	270	Date mg/L	Analyzed: 1.1	09/30/2009 1741 5.0	1.0

Job Number:

500-21398-1

Client Sample ID:TS40049 Lab Sample ID: 500-21398-17 Date Sampled: 09/24/2009

1040

Date Received:09/29/2009

1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0 Chloride Sulfate	130 55	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1503 4.0 4.0	20 20
Method: 310.1 Alkalinity	270	Date mg/L	Analyzed: 1.1	09/30/2009 1748 5.0	1.0

Client Sample ID:TS40050 Lab Sample ID: 500-21398-18 Date Sampled: 09/24/2009

1141

500-21398-1

Job Number:

Date Received:09/29/2009

1030

Analyte	Result/Qualifier	Unit	MDL	RL	Dilution
Method: 300.0		Date	Analyzed:	10/01/2009 1517	
Chloride	66	mg/L	0.92	4.0	20
Sulfate	50	mg/L	1.3	4.0	20
Method: 310.1		Date	Analyzed:	09/30/2009 1756	
Alkalinity	250	mg/L	1.1	5.0	1.0

Job Number:

500-21398-1

Client Sample ID:TS31007 Lab Sample ID: 500-21398-19 Date Sampled: 09/24/2009

1400

Date Received:09/29/2009

1030

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method: Chloride Sulfate	300.0	66 35	Date mg/L mg/L	Analyzed: 0.92 1.3	10/01/2009 1531 4.0 4.0	20 20
Method: Alkalinity	310.1	230	Date mg/L	Analyzed: 1.1	09/30/2009 1834 5.0	1.0

Mr. Kirk F Young TestAmerica Laboratories, Inc. 30 Community Drive Suite 11 South Burlington, VT 05403

Job Number:

500-21398-1

Client Sample ID:TS31008 Lab Sample ID: 500-21398-20 Date Sampled: 09/24/2009

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Date Received:09/29/2009

1030

Client Matrix: Water

Analyte		Result/Qualifier	Unit	MDL	RL	Dilution
Method:	300.0		Date	Analyzed:	10/01/2009 1546	
Chloride		61	mg/L	0.92	4.0	20
Sulfate		32	mg/L	1.3	4.0	20
Method:	310.1		Date	Analyzed:	09/30/2009 1841	
Alkalinity		230	mg/L	1.1	5.0	1.0



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

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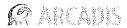
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CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

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Contact & Company Name: ERIC HRITSUK Address:	Telephone:	1937 x24	Preservative Filtered (√)	E	A	E	E	E	Ć.		Keys Preservation Key: Container Information Key: A. H.SO. 1. 40 ml Vial B. HCL 2. 1 L Amber
Address:			# of Containers	2	2	1	1		1		C. HNO ₃ 3. 250 ml Plastic D. NaOH 4, 500 ml Plastic
ERIC HRITSUK Address: 30 W. MONROE ST City State Zip	3/2 332 H ¹ E-mail Address:	134	Container Information	2		3	9	3	3		E. None 5. Encore F. Other: 6, 2 oz. Glass
City State Zip	1			PAF	KAMET	ER ANA	LYSIS	S MEIH	<u> </u>		7. 4 oz. Glass G. Other: 8. 8 oz. Glass
Project Name/Location (City, State):	Project #:	K@ARCADIS-US.CO	<u>~</u>		/	/	/	\ /	/	/	H. Other:
PLAINWELL GW SAMPLING Sampler's Printed Name:	BOOGH 539.00	00.00500] /		., /		/1.0	155	· /		10. Other: Matrix Kéy;
Sampler's Printed Name: MICHAEL KOTTAGEN	Sampler's Signature:	12	- / 4/2	/13		. / 0	0 1 N	# \$\frac{1}{4} \ \frac{1}{4} \	ž /		SO - Soil SE - Sediment NL - NAPL/Oil W - Water SL - Sludge SW - Sample Wipe
Sample ID	Collection Date Time	Type (✓) Matrix		1000	A LO	135	CHED OF	X X X X X X X X X X X X X X X X X X X	STALS		T - Tissue A - Air Other:
TS40034	9/21/09/1503	VW	X	X	X	X	X	X			
TS4035	9/21/09 1545	VW	X	X	X	X	X	X			
T540036	9/21/09/1718	VW	X	X	X	X	X	X			
T540037	7/22/09 1024	VW	X	X	X	X	X	X			
T540038	9/22/09 0935	VW	X	X	X	X	X	X			
	9/22/09 1140	VW	X	/ <u>_</u>	X	X	X	X			
TS40039	1 10 11 11 10	VW	X	$\frac{1}{}$		X	X	V			
T540040	9/22/09 1146			<u> </u>	$\overline{}$	/	 	1			
T540041	1/22/09 1449	VW	X	X	<u>X</u>		X	X			
T540042	9/22/09 1455	VW	X	X	X	X	X_{-}	X			<u> </u>
TS31006	9/21/09 1430	VW	X		Χ	X	X	X_{-}		MS	MSP
Special Instructions/Comments:						☐ Special C	A/QC Instru	ctions(√):			
Laboratory Informat				uished By			Received B	y		Relinguishe	B
LAD NAME: TAL BURLINGTON	Cooler Custody Se	al (✔)	ted Name: MICHAEL	- Kon	v2=1	Printed Name:	:		Printed Name	:	Printed James Kolb
Cooler packed with ice (*)	X Intact	☐ Not Intact Sign	sature:		1	Signature:			Signature:		Signature: (Wouldelle-
Specify Turnaround Requirements:	Sample Receipt:	Firm	10-00			Firm/Courier:			Firm/Courier:		Firm: TA
STANDARD	$\frac{1}{5.313}$.8,4.7,4.2 Fin	RCADLS	>		Date/Time:			Date/Time:		Date/Timer C1/22/1/0. 10/h
Shipping Tracking #:	Condition/Cooler To	нор: <u>*</u>	27 09	1730							Date/Timer 9 23 69 1620



CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

eCOC ID:	092409.1

Contact & Company Name:	Telephone:			1	Ε	Α	E	E	Е	С			KEYS
6	312-332-4937			Preservative								Preservation Key:	Container Information Key:
Eric Hritsuk Address:	512-332-4937 Fax:			# of Containers	2	2	1	1	1	1		A. H ₂ SO ₄	1. 40 mL VOA
ន្ត[312-332-4434			Container	2	1	3	9	3	3		B. HCL C. NaOH	2. 1 L Amber 3. 125 mL Plastic
Z 30 W Monroe St City State Zip	E-mail Address:			information	PARAMETER A						<u> </u>	D. HNO ₃	4. 250 mL Plastic
						PARA	WEIER		IS & IVIE	THOD		E. None F.	5. 500 mL Plastic 6. 1 L Plastic
Chicago IL, 60603	e in any difference i	I of the second						in				G.	7. 2 oz. Glass
Project Name/Location (City, State):	Project #:							lkal				н.	8. 4 oz. Glass 9. 8 oz. Glass
Plainwell TCRA Mi	B0064539.000	0.00001						e, A					10.
Sampler's Printed Name:	Sampler's Signatu	ITE:						ilfat	.,			Matrix Key:	a at the Charles
Michael Kohagen	11/11/11	The same of the sa		_				Choride, Sulfate, Alkalintiy	Total Metais			SE = Sediment SO = Soll	A = Air SL = Sludge NL = NAPL / Oil SW = Surface
	Collection	Туре	T	Total PCB				ride	Ž.				·
Sample ID	Date Time		Matrix	o Par	700	TDS	TSS	ક	Totz			REMARKS	
TS40049	9/24/09 1040		W	X	X	X	X	X	Х				
TS40050	9/24/09 1141		W	X	Х	Х	Х	Х	Х				
TS31007	9/24/09 1400		W	Х	Х	Х	Х	Х	Х				
TS31008	9/24/09	Х	W	Х	Х	Х	Х	Х	Х				
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<u> </u>	<u> </u>			<u> </u>				[]Specia	I QA/QC I	netruction	ns (√)	<u> </u>	
Special Instructions/Comments:								Zi o peoid					
Laboratory Information and Receipt			Reilinquis	hed By				Received E	3у			Laboratory Received	
Lab Name:	Cooler Custody S	eal	Printed N	ame:				Printed Nar	ne:			Printed Name:	10 11
Test America - South Burlington			Michael K	Cohagen								Chri	3 holp
☑ Cooler packed with ice (✓)	□ Intact 図N/ASe	Not intact	Signature		A Security of	THE REAL PROPERTY AND ADDRESS OF THE PARTY AND		Signature:				Signature:	s Kolb u Kölle
Specify Turnaround Requirements:	Sample Receipt:	,	Firm: Arc	adis "	COURT OF WARE ASSESSED.	<u> </u>		Firm:				Firm: TA	
Standard	CK 9/2	25164										())	
Fed-Ex Tracking #:								Date/Time:				Date/Time:	0950
0	1,7,2	٤	092409		1800							712	5/09 0950

ARCADIS

Attachment 5

Analytical Reports for MDEQ Split Samples

ARCADIS

Attachment 5A

Analytical Reports for MDEQ Split Samples – Quarter 2 – June/July 2009

CHAIN OF	CUSTO	DY RE	CORD		PAGE	OF	: <u> </u>			DISPO	$\overline{}$				e filled i	n by C	Client)	
NORTHEAST A 2190 Technology Dri Telephone (518) 346 www.nealab.com	ve, Sche -4592	enectady Fax (5	y, NY 12308 LRF#			<09070	0006P1>			RETURN TO CLIENT DISPOSAL BY NORTHEAST ANALYTICAL ARCHIVAL BY NORTHEAST ANALYTICAL Additional charges incurred for disposal (if hazardous) or archival. Call for details.								
CLIENT (REPORTS TO BE SENT TO):			PROJECT#/PRO	JECT NAME:	ENTE			TER ANALYSIS AND METHOD NUMBER REQUESTED										
MDEQ/CPM			Plainu	ed Dans	HI TCLA		PRESE	RVATIVE	CODE								PRESERVATIVE KI	ΕY
PROJECT MANAGER:							BO	TTLE TY	PE:								0 - NONE	
Todd King / Yolau PHONE: 313 - 913-1313 SAMPLED BY: (Please Print)	y ton	Pla:nwell, MI					TTLE SI	ZE:	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \						-	1 - HCL 2 - HNO3 3 - H2SO4		
			REQUIRED TUR		ME:		単	ŀ	/~	久/	/	/	/	/	/		4 - NaOH	
CDM - R. MUI	Crow		STY] ₹		12	3 /	/	/	/	/		/	5 - Zn. Acetate	
SAMPLING FIRM:			NAME OF COU				CONTAINERS		195	'/	/ .	/	/	/	/ /	′	6 - MeOH	
			ted	EN C			P. O.	l /	(مرهن)	′ /	/		′ /	′ /	′ /		7 - NaHSO4	
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	FAX #:		T	GRAB/	SAMPLE		_	14		/	/	/	/	/	/	DEM	ARKS:	
SAMPLE ID	DATE	TIME	MATRIX	COMP	(NEA USE C		-	-	\leftarrow	$\overline{}$	-		/	 	-	KEIVI	AKNO.	_
PGW-11W12-01	4/29/04	1400	water	amo	AM0918		1	<u>_X</u> _										_
P6-2-03	4/29/09	1400	mater	Cran	AM 09 10			X										
PGW-MW12-02	6/29/09	1401	water	deno	4M091			メ									·····	
PGW-MW10-01	6/30/08	1155	water	طمري	AM1991	<u> 28 </u>	1	×										
Paw-mw10-03	6/30/09	1122	waser	anh	AM091	29	1	×										
				0		•	i											
AMBIENT OR CHILLED	TEMP: 12.	a°c	COC TAPE:	YW)		PROPERI	Y PRESE	RVED:	V.	N		OTHER N	OTES:	•			
RECEIVED BROKEN OR LEAKING:	v (1)	· · · · · · · · · · · · · · · · · · ·	COC DISCREPA	ANCIES:	Y (4)		RECVD W	//I HOLDIN	G TIMES:	V	N		<u></u>					
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SIGNATURE	SIGNATURE	KXLDO	horts	SIGNATURE			SIGNATURI									-		_
PRINTED NAME Renée MUCON PRINTED NAME			li oxtis	PRINTED NAME			PRINTED N	AME			PRINTED NA	AME			PRINTED NAM	IE		
COMPANY COMPANY			A	COMPANY			COMPANY				COMPANY				COMPANY			
DATE TIME 30 109 1345 MM	DATE/TIME	11/17	09 10:08	DATE/TIME			DATE/TIME				DATE/TIME				DATE/TIME			_



CAMP, DRESSER & MCKEE ONE WOODWARD AVE., SUITE 1500 DETROIT, MI 48226 CONTACT: TODD KING



CUSTOMER ID: PGW-MW12-01 **NEA ID:** AM09125 **NEA LRF:** 09070006-01

MATRIX: WATER **DATE SAMPLED:** 06/29/2009 **TIME:** 14:00

DATE RECEIVED: 7/1/2009 **TIME:** 10:08 **PROJECT:** PTCRA- PLAINWELL INVESTIGATION

SAMPLED BY: R. MULCRONE **LOCATION:** PLAINWELL, MI

CUSTOMER PO: N/A LAB ELAP#: 11078

				DATE		
PARAMETER PERFORMED	RESULTS	PQL	UNITS	ANALYZED	FLAGS	
SW-846 Method 8082						
Aroclor 1016	ND	0.0250	ug/L	07/02/2009	U	
Aroclor 1221	ND	0.0250	ug/L	07/02/2009	U	
Aroclor 1232	ND	0.0250	ug/L	07/02/2009	U	
Aroclor 1242	ND	0.0250	ug/L	07/02/2009	U	
Aroclor 1248	ND	0.0250	ug/L	07/02/2009	U	
Aroclor 1254	ND	0.0250	ug/L	07/02/2009	U	
Aroclor 1260	ND	0.0250	ug/L	07/02/2009	U	
Total PCB Amount	ND				U	

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

Note: There were several non-target peaks.

AUTHORIZED SIGNATURE:

Robert E. Wagner Laboratory Director

William A. Kotas Sr. Laboratory Representative



CAMP, DRESSER & MCKEE ONE WOODWARD AVE., SUITE 1500 DETROIT, MI 48226 CONTACT: TODD KING



 CUSTOMER ID:
 PGW-MW12-02
 NEA ID:
 AM09126
 NEA LRF:
 09070006-02

 MATRIX:
 WATER
 DATE SAMPLED:
 06/29/2009
 TIME:
 14:00

DATE RECEIVED: 7/1/2009 TIME: 10:08 PROJECT: PTCRA-PLAINWELL INVESTIGATION

SAMPLED BY: R. MULCRONE **LOCATION:** PLAINWELL, MI

CUSTOMER PO: N/A LAB ELAP#: 11078

				DATE	
PARAMETER PERFORMED	RESULTS	PQL	UNITS	ANALYZED	FLAGS
SW-846 Method 8082					
Aroclor 1016	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1221	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1232	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1242	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1248	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1254	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1260	ND	0.0250	ug/L	07/02/2009	U
Total PCB Amount	ND				U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the POL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

Note: There were few non-target peaks.

AUTHORIZED SIGNATURE:



CAMP, DRESSER & MCKEE ONE WOODWARD AVE., SUITE 1500 DETROIT, MI 48226 CONTACT: TODD KING



 CUSTOMER ID:
 PGW-MW12-02
 NEA ID:
 AM09127
 NEA LRF:
 09070006-03

 MATRIX:
 WATER
 DATE SAMPLED:
 06/29/2009
 TIME:
 14:01

DATE RECEIVED: 7/1/2009 **TIME:** 10:08 **PROJECT:** PTCRA- PLAINWELL INVESTIGATION

SAMPLED BY: R. MULCRONE LOCATION: PLAINWELL, MI

CUSTOMER PO: N/A LAB ELAP#: 11078

	DATE								
PARAMETER PERFORMED	RESULTS	PQL	UNITS	ANALYZED	FLAGS				
SW-846 Method 8082									
Aroclor 1016	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1221	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1232	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1242	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1248	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1254	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1260	ND	0.0250	ug/L	07/02/2009	U				
Total PCB Amount	ND				U				

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the POL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

Note: There were few non-target peaks.

AUTHORIZED SIGNATURE:

Robert E. Wagner Laboratory Director

William A. Kotas Sr. Laboratory Representative



CAMP, DRESSER & MCKEE ONE WOODWARD AVE., SUITE 1500 DETROIT, MI 48226 CONTACT: TODD KING



CUSTOMER ID: PGW-MW10-01 **NEA ID:** AM09128 **NEA LRF:** 09070006-04

MATRIX: WATER **DATE SAMPLED:** 06/30/2009 **TIME:** 11:55

DATE RECEIVED: 7/1/2009 **TIME:** 10:08 **PROJECT:** PTCRA- PLAINWELL INVESTIGATION

SAMPLED BY: R. MULCRONE **LOCATION:** PLAINWELL, MI

CUSTOMER PO: N/A LAB ELAP#: 11078

	DATE								
PARAMETER PERFORMED	RESULTS	PQL	UNITS	ANALYZED	FLAGS				
SW-846 Method 8082									
Aroclor 1016	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1221	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1232	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1242	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1248	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1254	ND	0.0250	ug/L	07/02/2009	U				
Aroclor 1260	ND	0.0250	ug/L	07/02/2009	U				
Total PCB Amount	ND				U				

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

Note: There were several non-target peaks.

AUTHORIZED SIGNATURE:

William A. Kotas Sr. Laboratory Representative

Robert E. Wagner Laboratory Director

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CAMP, DRESSER & MCKEE ONE WOODWARD AVE., SUITE 1500 DETROIT, MI 48226 CONTACT: TODD KING



CUSTOMER ID: PGW-MW10-03 **NEA ID:** AM09129 **NEA LRF:** 09070006-05

MATRIX: WATER **DATE SAMPLED:** 06/30/2009 **TIME:** 11:55

DATE RECEIVED: 7/1/2009 **TIME:** 10:08 **PROJECT:** PTCRA- PLAINWELL INVESTIGATION

SAMPLED BY: R. MULCRONE LOCATION: PLAINWELL, MI

CUSTOMER PO: N/A LAB ELAP#: 11078

PARAMETER PERFORMED	RESULTS	POL	UNITS	DATE ANALYZED	FLAGS
SW-846 Method 8082	ILSCLIS	TQL	CIVID	TH VIELEN	12105
Aroclor 1016	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1221	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1232	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1242	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1248	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1254	ND	0.0250	ug/L	07/02/2009	U
Aroclor 1260	ND	0.0250	ug/L	07/02/2009	U
Total PCB Amount	ND		_		U

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

Note: There were several non-target peaks.

AUTHORIZED SIGNATURE:

Robert E. Wagner Laboratory Director

William A. Kotas Sr. Laboratory Representative

ARCADIS

Attachment 5B

Analytical Reports for MDEQ Split Samples – Quarter 3 – September 2009

CHAIN OF (CUSTO	DY RE	CORD		PAGE .	<u> </u>	F! 、			DISPO	SAL RE	QUIRE	MENT	S: (To b	e filled in b	y Client)
				_			47704-				\simeq	RETURI				
NORTHEAST A	NALY	TICA	L, INC	•		< <u>090700</u>	17P1>	-			\simeq				AST ANALY	
2190 Technology Dri	ve, Sche	nectady	, NY 123	808	LRF#	01111111111111111111111111111111111111			-		\smile				AST ANALY	
Telephone (518) 346	-4592	Fax (51	8) 381-6 on @neala	055						Addit	ional char	ges incurr	ed for disp	osal (if ha	zardous) or arch	ival. Call for details.
www.nealab.com		mormau	PROJECT#PRO			090100111	ι		ENT	ER ANA	LYSIS A	ND ME	THOD N	UMBER	REQUESTE	D
			, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		+ (.TC.	eA	PRESE	RVATIVE								PRESERVATIVE KEY
CDM /MDEQ PROJECT MANAGER:			PROJECT LOCA	TION (CITY/ST	ATE) ADDRI	SS:	ВО	TTLE TY	PE:							0 - NONE
Todd King/Yolano	da Wal	ton	0	4.1	•		ВО	TTLE SI	ZE:							1 - HCL
			Plain	uell, MI					7	7	/	-7	/			2 - HNO3
313-963-1313							_ ა						/	/		/ 3 - H2SO4
SAMPLED BY: (Please Print)			REQUIRED TUR	N AROUND TH	NE:		CONTAINERS		<i>/</i> ,	/	/	/		/	/ /	4 - NaOH
CDM / Reviee M	Ulcrone		5TO	VED (15 110 FB)			- ≰		1 3	7/			/			5 - Zn. Acetate
SAMPLING FIRM:				,	:		l 5		/ 1/0	/ ,	/ ,	/	/ ,	/	/ /	6 - MeOH 7 - NaHSO4
COM			Fed			4:54 O-b	- B	/	10C4 (e. r.		/	/		/		7 - NaHSO4 8 - Other
ELECTRONIC RESULTS FORMAT:	E-MAII ADDRE	SS:	Data Report:	☐CLP*	Cei	tificates Only	出	/	$\langle \mathcal{A} \rangle$					/	/	8 - Other
PDF EXCEL (.CSV)	E-MAIL ADDRE	33.				LAB	NUMBER	. /	b /		/		/	/		
FAXED RESULTS	FAX #:	•		GRAB/	SA	MPLE ID	=	1/2	*/				/	/		
SAMPLE ID	DATE	TIME	MATRIX	COMP	(NEA	USE ONLY)		/ ×							/ R	EMARKS:
PGW-MW6-01	7/01/09	1355	water	Qrab	AM	79194	3	\times							MS/m	5P
PGW-MW1-01	7/01/09	1510	water	grab	AM	09195	١	X							_	
P6W-MW3-01	7/01/09	1045	water	grab	AM	09196	_	×								
,				O	'			` `								
															-	
AMBIENT OR CHILLED:	TEMP: 3, 2	عد	COC TAPE:	Y (N	2		PROPER	LY PRESE	RVED: (Y)	N		OTHER N	OTES:		
RECEIVED BROKEN OR LEAKING:	Y (N)	COC DISCREPA	NCIES:	Y (N	<i>)</i>	RECVD V	V/I HOLDIN		<u>(Y)</u>	N	DEL INGL	ISHED BY		<u> </u>	RECEIVED BY
SIGNATURE	SIGNATURE	RECEIVED B	<u> </u>	SIGNATURE	RELINQUISH	ED BY	SIGNATUR		IVED BY		SIGNATURE		ISHED BY		SIGNATURE	RECEIVED BY
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PRINTED NAME REVEL MUCrone COMPANY	COMPANY	4 100	A	COMPANY			COMPANY				COMPANY				COMPANY	
COM DATE/TIME	DATE/TIME	1/2/09	10:03	DATE/TIME			DATE/TIME				DATE/TIME				DATE/TIME	
67/01/09 05451	'M L	10101	10100								<u> </u>					

^{*} CLP LIKE DATA PACKAGE ADDITIONAL COST



CAMP, DRESSER & MCKEE ONE WOODWARD AVE., SUITE 1500 DETROIT, MI 48226 CONTACT: TODD KING



CUSTOMER ID: PGW-MW6-01 **NEA ID:** AM09194 **NEA LRF:** 09070017-01

MATRIX: WATER **DATE SAMPLED:** 07/01/2009 **TIME:** 13:55

DATE RECEIVED: 7/2/2009 **TIME:** 10:03 **PROJECT:** PTCRA- PLAINWELL INVESTIGATION

SAMPLED BY: R. MULCRONE **LOCATION:** PLAINWELL, MI

CUSTOMER PO: N/A LAB ELAP#: 11078

	DATE								
PARAMETER PERFORMED	RESULTS	PQL	UNITS	ANALYZED	FLAGS				
SW-846 Method 8082									
Aroclor 1016	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1221	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1232	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1242	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1248	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1254	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1260	ND	0.0250	ug/L	07/04/2009	U				
Total PCB Amount	ND				U				

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the PQL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

Note: There were several non-target peaks.

AUTHORIZED SIGNATURE:



CAMP, DRESSER & MCKEE ONE WOODWARD AVE., SUITE 1500 DETROIT, MI 48226 CONTACT: TODD KING



 CUSTOMER ID:
 PGW-MW1-01
 NEA ID:
 AM09195
 NEA LRF:
 09070017-02

 MATRIX:
 WATER
 DATE SAMPLED:
 07/01/2009
 TIME:
 15:10

DATE RECEIVED: 7/2/2009 **TIME:** 10:03 **PROJECT:** PTCRA- PLAINWELL INVESTIGATION

SAMPLED BY: R. MULCRONE LOCATION: PLAINWELL, MI

CUSTOMER PO: N/A LAB ELAP#: 11078

	DATE								
PARAMETER PERFORMED	RESULTS	PQL	UNITS	ANALYZED	FLAGS				
SW-846 Method 8082									
Aroclor 1016	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1221	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1232	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1242	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1248	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1254	ND	0.0250	ug/L	07/04/2009	U				
Aroclor 1260	ND	0.0250	ug/L	07/04/2009	U				
Total PCB Amount	ND				U				

Notes: ND (Not Detected). Denotes analyte not detected at a concentration greater than the POL.

PQL (Practical Quantitation Limit). Denotes lowest analyte concentration reportable for the sample.

Note: There were few non-target peaks.

AUTHORIZED SIGNATURE:



CAMP, DRESSER & MCKEE ONE WOODWARD AVE., SUITE 1500 DETROIT, MI 48226 CONTACT: TODD KING



 CUSTOMER ID:
 PGW-MW3-01
 NEA ID:
 AM09196
 NEA LRF:
 09070017-03

 MATRIX:
 WATER
 DATE SAMPLED:
 07/01/2009
 TIME:
 10:45

DATE RECEIVED: 7/2/2009 **TIME:** 10:03 **PROJECT:** PTCRA- PLAINWELL INVESTIGATION

SAMPLED BY: R. MULCRONE LOCATION: PLAINWELL, MI

CUSTOMER PO: N/A LAB ELAP#: 11078

				DATE			
PARAMETER PERFORMED	RESULTS	PQL	UNITS	ANALYZED	FLAGS		
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